The Builder.

VOL. XXXIV. No. 1767. SATURDAY, DECEMBER 16, 1876.

ILLUSTRATIONS.

Monument to the late Mr. John Perris 1216
The New Town-hall of Erfurt, Germany.—Herr Sommer, Architect 1216
The Bank of South Australia, Adelaide.—Messrs. Lloyd Tayler & E. W. Wright, Architects 1218

CONTENTS.

Battersea and its Park 1207
Art in Ornament and Dress 1208
The French Academy 1209
Public Works at Southport 1210
The Surplus Lands of the East-London Railway 1210
Monumental 1210
Temple Bar Improvements 1211
"Temple à la Victoire" 1212
The New School Building in the Boulevard Malesherbes, Paris 1212
A Doubtful Policy 1212
Institute of Painters in Water Colours 1212
The Architectural Treatment of the Roof 1213
A Market Town without the Rail: Wooler 1215
Liability for the Destruction of County Bridges: Nicholls v. Marsland 1216
Memorial of a Librarian 1216
The New Town Hall of Erfurt 1216
The Bank of South Australia, Adelaide 1221
Architecture in Leith 1221
Election of a District Surveyor 1221
The Art-Union of London 1221
Granite Building 1221
Architectural Association 1222
A House Purchase and Improvement Company 1223
The Past and Present of Architecture in Ireland 1223
Corporation Market at Knott Mill, Manchester 1224
New Flour Mills, Sudbury 1224
The National Gallery 1224
"Straits of Brompton:" Marlborough-road 1224
A New Bridge at Gloucester Gate, Regent's Park 1224
A New Roman Catholic College at Clapham 1224
Cost of London School-Board's Schools 1225
More New Board Schools for London 1225
Bad Construction of the Nunhead New Reservoir 1225
Nonfulfilment of Contract 1225
Breach of Contract 1225
Builders' Actions: Lacey v. Villiers—Villiers v. Lacey 1225
Compensation Case: Bird v. The London School Board.—A New School at Mile-end 1225
Glass Roofs for London 1226
Salt in Stone 1226
A Church in the Forest 1226
Sanatorium, Bantry Bay 1226
Risk at Thames Ditton 1226
Unhealthy Building at Battersea 1226
A Bigger "Jack" still 1227
The Spa Competition, Scarborough 1227
The New Bridge over the Regent's Canal, Chalk Farm-road 1227
"The Influence of Business Requirements upon Street Architecture" 1227
Church-Building News 1227
Books received: Richards's Economy of Workshop Manipulation (Spon); Variorum 1228
Miscellanea 1229

Battersea and its Park.

IF the various improvements made of late years in the metropolis few have been of greater value than that by which the wretched waste known as Battersea Fields was transformed into the beautiful Battersea Park. The fields had become a public nuisance when Mr. Thomas Cubitt, in 1843, suggested to her Majesty's Commission for Improving the Metropolis the advisability of laying them out as pleasure-grounds, and this design was subsequently pressed upon their attention by the Hon. and Rev. Robert John Eden, afterwards Lord Auckland, and successively Bishop of Sodor and Man, and Bath and Wells. In 1846 an Act of Parliament was passed to empower the Commissioners of Her Majesty's Woods and Forests to form a royal park in Battersea Fields, and Mr. (afterwards Sir) James Pennethorne's plan was approved, by which 320 acres were to be enclosed, at an estimated cost of 154,250*l*. The fields were naturally very low, and they were, in fact, entirely overflowed by the river at high-water, until about 300 years ago, when an embankment was raised, and the land reclaimed. One of the first necessities, therefore, when the scheme of forming a park was entertained, was to raise the general level of the land, and fortunately at this time the extensive excavations for the Victoria Docks, in the Plaistow Marshes, were being proceeded with, so that there was no difficulty in obtaining the required loads of earth. The excavations from the St. Katharine Docks had been used in the same way, in 1827, to fill up the reservoirs of the Chelsea Waterworks, and thus form a site for a new town which grew up south of Pimlico. One million cubic yards of earth are said to have been deposited upon Battersea-fields from the Victoria Docks and other sources. This operation occupied several years, and there were great complaints of delay in carrying out the various proposals. In 1851 another Act of Parliament was passed to alter and extend the powers of the one of 1846, by which a Commission, incorporated as the Battersea Park Commission, was appointed, with power to sell, demise, or lease lands not required for the park. Still the works did not proceed very rapidly, and little was done before 1855 or 1856; then the drives and walks were laid out, and the ornamental water formed. The planting commenced in 1857. On March 28, 1858, the Chelsea Suspension Bridge was opened, by which the park was made easily accessible to the dwellers on the north side of the Thames, but great public dissatisfaction was expressed when it was found that a toll was to be exacted. By the formation of mounds and banks several acres were reclaimed along the sides of the river, and the total acreage of the park was about 200, rather less than was at first proposed. The park, besides the ordinary features which it has in common with its fellows, possesses a sub-tropical garden of four acres, that has been proved to be one of the most successful efforts of out-door gardening in modern times. Here the East and West Indies, Japan, South America, and Australia, all send their contingent, and the graceful foliage of warmer climes is brought to gladden the eyes of those used to a more northern flora. Every year adds to the beauty of the park, for the trees increase in height, and the shrubs in denseness; so that, as less is seen at one time, the sensation of size is increased. Such is the change that thirty or forty years have made in the once miserable expanse which was given over every Sunday to the low amusements of the dangerous classes, and was at one time considered a fit rendezvous for the duellists. Here, on March 21, 1829, the Duke of Wellington and the Earl of Winchelsea had their celebrated hostile meeting. Still, in spite of their bad name, the old fields had their admirers, who loved to seek in them for the abundant wild-flowers. A learned botanist in the last century compiled a flora of Battersea, and many of the plants that luxuriated in these fields were not to be met with elsewhere, except at places much farther from London. The noted place of entertainment called the Red House stood nearly opposite to Chelsea Hospital. It was a favourite resort for the lovers of shooting-matches. Pigeons were there sold (to be shot at) at 15*s*. a dozen, starlings at 4*s*., and sparrows at 2*s*.

Battersea has a history of some interest, dating from the time when the manor was in the possession of Harold. At the Norman Conquest it passed into the hands of William the Conqueror, who exchanged it with the Abbey of St. Peter at Westminster for lands at Windsor. We have no earlier record of the name than that in Domesday Book, where it appears as *Patricesy*; and as Petersham, which belonged to St. Peter's Abbey, Chertsey, is there spelt *Patricesham*, it is supposed that the earliest form of Battersea originated in the connexion of the place with St. Peter's Abbey. The *c* in both these words was sibilant, and therefore the pronunciation could not have been very different from what it is now, but it is a curious anomaly that the *p* in *Patricesy* should have changed into *b*, while that in *Patriceham* has continued unchanged. What the final syllable represents is less clear, as there is no sign of an island at Battersea now, although there may have been once. Chelsea was originally *Cealc-hythe* or *Chelc-hythe*, and was a haven on the Thames, not an island, just as Lambeth was "Lambe-*hithe*," or haven; but there is no recorded form of Battersea that would allow us to say that *ey* or *ea* represented *hithe*. There was, however, until about thirty years ago, a creek, up which tradition reports that Queen Elizabeth rowed. A bright little stream rising in Tooting, and passing by Wandsworth Common, flowed into the Thames at this creek, which is now a mere sewer, and its better character is only kept in remembrance by the name of Creek-street.

The manor of Battersea, which had remained in the possession of the Westminster monks for several centuries, was vested in the Crown at the period of the dissolution of the monasteries. Elizabeth, in the eighth year of her reign, granted it on lease for twenty-one years to Henry Roydon, and in 1593, Joan Holcroft, the only daughter of Henry Roydon, had another lease for a similar term. Subject to this lease, the manor was assigned in 1610 towards the maintenance of Henry Prince of Wales, and after his death it was appropriated in the same manner to his brother Charles, Prince of Wales. After Charles's accession to the throne, the manor was granted, in 1627, in fee, to Sir Oliver St. John, Viscount Grandison, a friend of the Duke of Buckingham, who had filled the office of Lord Deputy of Ireland, and in his family it remained for nearly 150 years.

In the reign of Henry VI. Thomas Lord Stanley possessed a considerable estate in Battersea, which, apparently to avoid its confiscation at that disturbed period, he conveyed to trustees for his own benefit and that of Thomas, his son and heir. In December, 1460, the trustees transferred this property to Lawrence Booth, bishop of Durham, and his heirs, and in the following year the grant was confirmed by the two Stanleys. In spite of this transfer the estate had escheated to the Crown before the eleventh year of Edward IV., in consequence of the action of John Stanley, who assigned the lands and tenements in trust to the Abbot of Westminster, in contravention of the Statute of Mortmain. The bishop, therefore, had to apply direct to the king, and on payment of 700*l*. he obtained a grant under letters patent, dated July 10, 1472, of the property forfeited by John Stanley. He also received the king's licence to enclose his mansion-house, called Brygge-court, which he had built "with walls and towers, and to impark his land there, with the right of free warren and free chase therein." Bishop Booth was translated to York in September, 1476, and prior to his decease, in May, 1480, he bequeathed this property to the Dean and Chapter of York, with a view to the accommodation of his successors in the see, so that they might have a convenient residence when their affairs called them to London. There is a tradition that Wolsey lived here, and the room in York House was shown where he was supposed to have entertained Anne Bulleyn, but it is little likely that the luxurious cardinal should have taken up his residence at Battersea while he possessed a more convenient palace at West-

minster. When Archbishop Holgate was committed to the Tower by Queen Mary in 1553, the officers who were employed to apprehend him, rifled his house at Battersea, and took away from thence "300*l.* of gold coin, 1,600 oz. of plate, a mitre of fine gold, with two pendants set round about the sides and midst, with very fine pointed diamonds, sapphires, and balists; and all the plain with other good stones and pearls; and the pendants in like manner, weighing 125 oz.; some very valuable rings, a serpent's tongue, set in a standard of silver gilt and graven; the archbishop's seal in silver; and his signet, an antique in gold."* He was deprived of his see in the following year, because he was a married man.

By a special clause in the lease of the person who farmed the York estate, four score acres of land were reserved to be surrendered to the Archbishop to use as demesne lands at a month's notice, whenever he should be resident at Battersea or within sixty miles of that place. This clause was systematically infringed, and the archbishops were unjustly deprived of their rights. Archbishop Grindal had a successful suit with the farmer, and leased the estate to a new tenant, but when he was translated to Canterbury he did not give up the property to his successor. Among the State Papers is a letter dated August 22, 1580, from Archbishop Sandys to John Wickliffe, keeper of his house at Battersey, in which he directs him to deliver up the house to the Lords of the Council, so that it might be turned into a prison for obstinate Papists. During the Commonwealth York House was sold to Sir Allen Apsley and Colonel Hutchinson for the sum of 1,806*l.* 3s. 6d., but it was reclaimed by the see after the Restoration. The remembrance of the connexion of the Archbishops of York with Battersea is kept alive by the name of York-road.

We will now return to the consideration of the successive possessors of the manor. Oliver Lord St. John and Viscount Grandison died in 1630, when his English title became extinct, and that of Grandison descended to his grand-nephew, William Villiers, father of the notorious Duchess of Cleveland. The Battersea estate also came into the hands of Villiers, who granted it to his cousin Sir John St. John, bart., who died in 1648. It then fell to Sir Walter St. John, the nephew of Sir John. He died on July 3, 1708, and was succeeded by his son Henry, who so long before as 1684 had pleaded guilty to the murder of Sir William Estcourt, bart., in a sudden quarrel arising at a supper party. In 1716 the above-named Henry was created Baron St. John of Battersea and Viscount St. John, with remainder to the issue male of his second wife. His eldest son by his first wife was then under attainder, and the titles so descended on his death in 1742. Henry St. John, the celebrated statesman, was born at Battersea, and baptised there on October 10th, 1678. In 1710 he was Secretary of State to Queen Anne, by whom, in 1713, he was created Baron St. John, of Lediard Tregoze, in Wiltshire, and Viscount Bolingbroke, with remainder, in default of male issue, to that of his father. On the accession of George I., in 1715, he was attainted for high treason; but in 1723 he was restored in blood, and in 1725 an Act of Parliament was passed to annul the attainder, in consequence of which he inherited the family estate on the decease of his father, and he held it until his death in 1751. The estates with the titles descended to his nephew Frederick (son of his half-brother, John Viscount St. John), who obtained an Act of Parliament in 1762 to sell his estate, which was purchased in 1763 by the trustees of John, Earl Spencer.

As the place of his birth, Lord Bolingbroke is supposed to have been peculiarly partial to Battersea, and he expressed the wish that he might breathe his last in the house of his ancestors there, which wish was accomplished. Bolingbroke House was a large mansion, situated near the church, which was mostly pulled down in the year 1777. Bolingbroke-gardens and Bolingbroke-terrace mark the site. Pope's "Essay on Man" is said to have been partially written in a room wainscoted with cedar, which overlooked the Thames, and was the poet's favourite study. Lord Bolingbroke's second wife was the widow of the Marquis de Villette, and the niece of Madame de Maintenon. She died on the 18th of March, 1750, the year before her husband. In Battersea Church is a monument to their memory by Roubiliac, on which is a highly laudatory inscription, commencing "Here lies Henry St. John, in the reign of Queen Anne Secretary of War, Secretary of State, and Viscount Bolingbroke; in the days of King George the First and King George the Second something more and better." It is also stated of the Viscountess that "she lived the honour of her own sex, the delight and admiration of ours; she dyed an object of imitation to both, with all the firmness that reason, with all the resignation that religion, can inspire."

The present church at Battersea was built according to Act of Parliament (14 Geo. III.), and was opened on the 17th of November, 1777. There is a river view of Battersea by Boydell, which shows the old church as it stood in 1752. When the old building was pulled down care was taken to preserve the monuments and the stained glass, which were re-erected in the new one. Besides the Bolingbroke monument already noticed, there are other memorials of the St. John family, and a curious monument to Sir Edward Wynter (died March 2, 1685–6, aged 64), who, according to the inscription in his honour, outstripped the actions of the boldest knights of chivalry. Unarmed he crushed a tiger to death, and on foot he routed forty mounted Moors.

. . . "What more could Samson do?
True to his friends, a terror to his foes,
Here now in peace his honor'd bones repose!"

The stained-glass window which was removed from the old church to the new contains portraits of Henry VII., his grandmother, Margaret Beauchamp, and Queen Elizabeth, but the work is not of early date. The new church is a brick building, with an octagonal spire, and about the year 1823 an entrance portico of the Doric order was added to it. The elder Charles Mathews said that Battersea steeple being of copper was coveted by the Emperor of Russia for an extinguisher, and that the horizontal windmill (which was erected about 1788 on the site of Bolingbroke House) was a case for it. His Imperial Majesty intended to take them with him, but left them behind from forgetfulness. The church is far from handsome either within or without. It has neither aisles nor chancel, and the communion-table is placed in a recess at the east end; the pews are of the old-fashioned regulation height. A little girl, who was taken to church for the first time, complained that she had been shut up in a closet and sat upon a shelf, which is not a bad description of these antiquated abominations.

The parish register records the burial of Arthur Collins, author of the well-known "Peerage," in 1760; of William Curtis, author of "Flora Londinensis," in 1799; and of Thomas Astle, author of the "Origin and Progress of Writing," in 1803. In 1648, Sir John St. John was buried at Battersea with such unusual pomp that the heralds were flattered, and commenced a prosecution against the executor for acting contrary to the usage of arms and the laws of heraldry. William Riley, one of the heralds, deposed "that the funeral of the deceased was conducted in a manner so much above his degree that the escutcheons were more than were used at the funeral of a duke; and that he never saw so many pennons but at the funeral of one of the blood royal." This burial is omitted in the register.

About 1159 Lawrence, Abbot of Westminster, obtained the appropriation of the great tithes for his monastery, out of which the monks were to receive two marks, and sufficient was to be reserved to support the vicar. In the reign of Philip and Mary the rectory was held by John, Bishop of Winchester, and it was granted by Queen Elizabeth in her twenty-third year to Edward Downing and Peter Ashton. The rectory afterwards came into the possession of the St. John family, and passed with the manor to Earl Spencer.

Owen Ridley was instituted to the vicarage of Battersea in 1570, and appears to have encountered considerable persecution from his parishioners for several years. Some of them petitioned Dr. Swale, one of the Ecclesiastical Commissioners, that the vicar might be deprived of his cure, one of his chief crimes being that of conversing with a witch. Others presented a counter-petition to Lord Burghley, which was signed by Robert Cooke, Clarencieux king of arms. Thomas Temple, brother of Sir John Temple, Irish Master of the Rolls, was vicar during the Commonwealth, and was also one of the Assembly of Divines. He was succeeded by the learned Dr. Simon Patrick, afterwards rector of Covent-garden, dean of Peterborough, and successively bishop of Chichester and Ely.

Battersea Bridge, one of the structures which long offered a serious hindrance to the navigation of the Thames, was built in 1771 and 1772 in accordance with an Act of Parliament (6 Geo. III., cap. 6) which was obtained when John Earl Spencer expressed his wish that a bridge should replace the ferry, of which he was the owner. It was built by Holland, at the expense of fifteen proprietors, each of whom subscribed 1,500*l.* Within the last few years iron girders have been introduced in order to enlarge some of the arches.

Formerly the largest portion of the land at Battersea was occupied by the market gardeners, and the produce of the fields was in considerable repute. Fuller, writing in 1660, says,—"Gardening was first brought into England for profit about seventy years ago, before which we fetched most of our cherries from Holland, apples from France, and had hardly a mess of rath (*i.e.*, early) ripe peas but from Holland, which were dainties for ladies, they came so far and cost so dear. Since gardening hath crept out of Holland to Sandwich, Kent, and thence to Surrey, where, though they have given 6*l.* an acre and upwards, they have made their rent, lived comfortably, and set many people on work." (*Worthies.*) Now the builder is rapidly encroaching upon the fields and the hedges, and ditches are fast disappearing. By an old custom of the manor, lands descended to the younger son, and in default of sons were divided equally among the daughters. An Act of Victoria, however, annulled such local customs. There is little more to add to this description of Battersea, except to mention the factories for which it has long been noted. The English enamels formerly made here are now much sought after. Sir Marc Isambard Brunel's celebrated saw and veneer mills were burned down about the year 1814.

The chemical and other works that have found here so convenient a location are not altogether looked upon with favour by the other inhabitants. And it is supposed that they contaminate the air and injure the condition of the sewers.

ART IN ORNAMENT AND DRESS.

An attempt to lay a foundation for style and taste in dress upon the ground of general principles common to all the non-phonetic arts, and thus to connect the architecture of costume with the more permanent forms of decorative structure, has a degree of novelty in it. This is what is attempted in the treatise of M. Charles Blanc,* which originally appeared in the shape of serial articles in the *Gazette des Beaux Arts*, and is now published in a separate form. No translator's name is appended to the English edition, which is not written in the best possible style, and betrays confusion in the transmuting of French idiom into English here and there, even without comparison with the original; however, like Mercutio's wound, "'tis enough,—'twill serve": it makes a very agreeable book, and an undeniably suggestive one.

We begin, with M. Blanc, at the very beginning—general laws of ornament; "repetition, alternation, symmetry, progression, and confusion": illustrated in the first instance by sketches of typical forms of architectural detail, which, to say truth, are by no means well rendered. The section which has the most important bearing on what follows is that on "symmetry," since that quality, in its conventional sense of a likeness between two halves on either side of a centre line, is peculiarly illustrated in the figure, which is the basis of costume. The author, like some other critics, overdraws the relation between architecture and the figure in this respect, as in saying, for instance, that a temple having its principal entrance in a corner of the building would seem to us outrageous, "because its façade would bear no resemblance to the aspect of the human face." That is not the way to put it at all, for we know that a principal entrance may be placed at the angle of a building with very fine effect: the correct statement would be that a building symmetrical in all other points would lead us necessarily to expect symmetry in so important a feature as the placing of the doorway. Still more incorrect as to fact is his statement, in illustration of the need for symmetry felt by artistic nations, that "the Athenians, the better

* Strype's "Life of Cranmer," p. 308.

* "Art in Ornament and Dress." Translated from the French of Charles Blanc, Member of the Institute, and formerly Director of Fine Arts. With illustrations. London: Chapman & Hall.

to mark the central point of the Parthenon, took care that the space between the middle columns should be wider than between the others, while to right and left of the door the columns were closer and closer together." Where M. Charles Blanc got this from we know not. But he recognises the fact that symmetry is the highest law and realises the gravest and most dignified effect, and that departure from symmetry leads to a lighter kind of effect, to piquancy and picturesqueness, and that this principle is as much illustrated in dress as in architecture; though in both he seems disposed to lay too much stress upon symmetry, and to undervalue the effect of unsymmetrical grace, in ornament, as much as it is over-valued by the enthusiasts for Japanese irregularities at the present time. Among secondary qualities of interest in ornament the author rightly gives an important place to what he defines as "complication," the tendency of which is "to provoke the curiosity of the spectator and rouse him to an investigation which promises to be of interest." This is a most valuable element in ornament, not sufficiently recognised with us: it is what gives much of its interest to Saracenic ornament, and to such a design as that Roman mosaic pavement formed by intercepting circles, which has been copied in the Kensington Museum, and is so continually pleasing to the eye. Any ornament which displays what may be termed a "curiosa felicitas," which attracts the eye to consider how it is contrived, is sure to supply an element of interest.

In regard to the main object of his book, M. Blanc justifies the degree of attention he requests to the subject of dress and personal adornment, by the consideration of the superior beauty and interest of a living being over a lifeless object; and yet, while in a list of the decorative arts we find all honour paid to the jeweller, the glass manufacturer, &c., "we shall find no mention made of the man who invents a new style of dressing the hair, or of her who designs costumes and fashions." There is a certain truth in this also, only the interest we take in each other is not confined to appearances; and even a beautiful woman, if intellectual also, is valued by sensible people for her intellect more than for her beauty. We are quite at one with the author in thinking personal adornment, especially in regard to women, a beautiful art, and which deserves to be considered more directly in relation to general artistic principle than it mostly is, only do not let us exaggerate, and talk as if this outward adornment were as important in a man or woman as in an inanimate object, which is made simply for ornament and nothing else. Besides, it is a melancholy but undeniable fact, that we are not (even the fairer sex) all beautiful; it used to be said that a certain eminent philosophical writer, and his wife, and their favourite dog, were the three ugliest objects to be seen in London; and in such a case the treatment of man or woman as pre-eminently a work of art is beset with difficulty.

M. Blanc's remarks upon colour in dress, and its effects and affinities, are often brilliant and clever, and suggest new meanings and associations. Yellow striped with black characterises, he observes, the colour of the most formidable animals, and the most venomous insects,—the tiger, the panther, the wasp; "and this contrast of black and yellow is also much fancied in countries where the passions are hot and violent." Is, then, the liking for this strong vivid combination a taste connected in any way with a violent temperament? That might be going too far: it would, perhaps, be more correct to say that it is a taste nurtured in lands of brilliant sunlight, where feeble colours would seem weak and faded to eyes accustomed to the glare of yellow light. But the author thinks there is a sort of moral character in colours as well as a merely optical one. "Red has an expression of dignity, magnificence, and pomp. There is something imposing and terrible in the robe of a criminal judge." (Here we might ask, perhaps, which is cause in this case, and which is effect?) "The expression of blue is one of purity. It is impossible to attach to this colour the idea of boldness, licence, or voluptuousness. Blue is an unobtrusive and imaginative colour, which, recalling the impalpable ether and the clearness of the calm sea, necessarily pleases the poet by its immaterial and celestial character. .... It is, moreover, of all colours that which ascends the highest and descends the lowest in the scale of chiaroscuro. Nothing so much resembles white as light blue, and nothing so much resembles black as dark blue,—the *bleu d'enfer*, as dyers call it. The result is that this colour is more susceptible than others of approaching extremes, and thereby changing its character. It may be suitable in its light shade for the dress of an innocent maiden, and in its dark for romantic affections and evening thoughts. It seems in this latter case to indicate a mind which is beginning to withdraw itself from the realities of life, and to incline to solitude, mystery, and silence." That is pretty, but a little too fanciful; and the very name given by the dyers to the dark blue suggests what will have occurred to the reader, that this tone of colour may be menacing enough in its effect; just as, on the other hand, we can at this moment recall Vandyke portraits clad in light blue, which have an effect and expression anything but modest and retiring. But his suggestions on the echo of colour in dress are very good; for example, if the upper and under skirt are of two contrasted colours, such as pale blue and straw colour (a charming combination), "if the blue skirt is ornamented with a deep-plaited ruche, the sleeves of the straw-coloured tunic should have small blue plaitings," an effect of repetition both in colour and surface-treatment, which is illustrated in a very pretty colour-printed sketch; and he makes a hit in quoting the remark of a lady,—"It is possible to dream in a skyblue bonnet, but it is absolutely forbidden to weep in a pink one!"

We like, also, M. Blanc's remarks on the element of dignity in dress, as opposed to too much complication and angularity of line, or even to over-richness. He dislikes the tartan exceedingly, for this reason; and we know that when Mr. Charles Mathews dresses for "Cool as a Cucumber," he can find nothing so suitable for the ultra-impudence of the character as a very large check pattern. M. Blanc points out that in Paolo Veronese's "Marriage of Cana," the magnificent figured stuffs are reserved for the musicians and cup-bearers, while the Virgin and Christ and those who are in the seats of honour are simply clad in woollen tunics of pure red and blue. "But is it not wonderful," he observes, "that the same principles which govern greater things rule also lesser, and that unity is a necessity of nobleness even in the most frivolous art, as well as the secret of greatness in the highest efforts of the human mind?" But in spite of these "most excellent sentiments," we must quarrel with M. Blanc for the want of this very nobility and dignity in the illustrations to his book. His figures of ladies, illustrating various qualities in the design of dress, are for the most part artificial and affected to a degree, and come very near to the mere *modiste* type. The detestable chignon is shown everywhere in all its repulsiveness. And there is not apparently the slightest recognition in his pages of the possibility of the picturesque of dress in an economical form; there is no place in his scheme of the art for those who cannot keep long milliners' bills; no suggestion of the possible beauty and character in combinations of homely materials for the poorer classes. This is a serious defect; and we fear the author's notions of the artistic lie too much on the surface. He says, in his chapter on personal ornaments, that "an object destined for use may be embellished but cannot be intrinsically beautiful, for if its chief characteristic is beauty, it is no longer suitable for use. Only a savage would put salt into Benvenuto's famous salt-cellar, or use a Panathenian amphora in offering wine to his guests." Such a remark is simply nonsense, and indicates a totally false idea of the relation of art to utility.

The chapter on jewels contains, however, some very good remarks: the author, while observing that jewelry, more than any other class of personal ornament, should be governed by symmetry of arrangement or design, points out how unsuitable for this purpose is any design partaking too much of architectural character; and also urges that representations of the figure are out of place, as competing in interest with the real figure of the wearer,—turning what should be a subsidiary ornament into a predominant attraction. This may be more open to question, but we are inclined to agree with M. Blanc; jewels should not be pictures; they should preserve a purely ornamental character. He is quite right also in his admiration of the emblematic use of jewelry:—"In the earliest ages jewels were emblems. The gems worn by men and women bore the impression of profound sentiment, or contained some allusion to a religious idea." Symbolism, which is the bane of the higher arts, finds its true field in this beautiful and fanciful branch of art, adding to the object a meaning and an interest beyond that excited by its value or its beauty of form or colour. While dwelling with evident pleasure on "these treasures of concentrated light and colour with which human beauty can adorn itself," M. Blanc does not allude to one characteristic of these adornments, their imperishable nature in comparison with that superior but transient beauty of which they are the appendages. An old English poet can supply the reflection, in words of equal grace and tenderness. Herrick exhorts a fair one not to be proud of those eyes "that sparkle star-like," nor of the effect of her charms,—

> "Whenas the ruby that you wear,
> Sunk from the tip of your soft ear,
> Will last to be a precious stone,
> When all your world of beauty's gone!"

A melancholy moral, certainly, which "must give us pause," were there not also another side to it.

But, in spite of certain deficiencies we have named, we recommend M. Blanc's pages to those who are interested in the art of personal adornment.

THE FRENCH ACADEMY.

On Thursday, November 30th, M. Charles Blanc, the well-known art critic and historian, the philosophic Vasari of France, was elected a member of the French Academy.

M. Charles Blanc's writings are well known in England, and, unlike most Frenchmen who have written about English art, he at least acknowledges some merit to our painters.*

M. Charles Blanc has peculiarly qualified himself for an art critic, having devoted the whole of his life to the subject, commencing early as a practical artist in the *atelier* of the famous engraver Calamatta, and working by the side of Mercuri, to whom we owe the beautiful engraving of the "Moissonneurs." This *atelier* being constantly visited by the enthusiastic art *littérateurs* of thirty years ago, M. Charles Blanc imbibed at this time, not so much a distaste for the practice of engraving, as a strong love for the literature and philosophy of art, and he has admirably shown us, in his Grammar of Arts and Design, an interesting account of the psychological processes that have led to the creation of modern French art. Unlike our own great Ruskin, M. Charles Blanc has made no attempt to disturb long established reputations. His respect and veneration for the efforts of other men to realise their ideal has been thoroughly catholic. He must be excused, as all Frenchmen it appears must be, for an egoism which gives so preponderating an admiration for the art of his countrymen, and he evidently partakes, as all Frenchmen do, of that hopeless view of English art, classing our painters and sculptors with the possession of no more claim to style than they find in our dressmakers or our cooks.

His election to the French Academy appears to have been made an exceedingly novel and most unsuitable occasion for political discussion, but, really, when one thinks that politics and art are the only two subjects the Parisians seem to consider, we must not wonder that the election of M. Charles Blanc, the brother of the well-known Louis Blanc, to the membership of the Institute, should call forth some remarks from that numerous *clique* of Bonapartists and Legitimists, who appear still to permeate all societies.

The constitution of the Institute, as it is called, is somewhat complex in its construction, and from its earliest days there was an indecision in its regulations. Founded by Cardinal de Richelieu some ten years earlier than our own Royal Society, the Académie Française received on January 2nd, 1635, its letters-patent signed by Louis XIII. Founded a few years later (1648) the Academy of Painting and Sculpture, as it was then called, was, properly speaking, the oldest of all the French academies, for as early as the fourteenth century we find traces of the existence of an association of this nature, and the society of Saint Luc had existed some time previously. In 1655 the Society was definitely constituted by Cardinal Mazarin, and in 1671 the far-seeing minister Colbert instituted the Academy of Architecture. Founded in 1666, also by this minister, the Academy of Sciences only received the approbation of his royal master in 1699. The Academy of Inscriptions

* The thin volume which treats of the English school in the great work of M. Charles Blanc is not from his own hand, but by his *collaborateur*, M. Bürger.

and *Belles Lettres* then followed, composed at its foundation in 1663 of four members chosen by Colbert; the business of this body was to prepare and write inscriptions for whatever monuments might be erected or medals struck in honour of their august master.

These four academies created in the seventeenth century, existed just as our English bodies of the same nature do at the present moment, each as a separate corporation, having no connexion with each other; and thus they continued to exist till the period of the French Revolution, which entirely broke up their constitutions, and formed, *by their union*, the body now called the Institute.

Suspected of monarchical sentiments, in 1793 the Académie Française was suppressed, but two years later was re-constituted, when, in 1795, the law of the 25th of October founded the modern Institute. In the beginning this was composed of simply three classes,—the Academy of Sciences; the class of moral and political sciences analogous to the present academy of the same name, and to a portion of that of the inscriptions and *belles lettres*; lastly, the third class, that of literature and the fine arts, embracing what we should now call the Académie Française, the Academy of the Fine Arts, and that of Inscriptions and *Belles Lettres*.

Once established, the Convention gave to the Institute the power of naming the forty-eight members, who were again to select the other ninety-six. By the law of 1796 it was decreed that the Institute should be composed of 144 members residing in Paris, of an equal number of associates chosen from the whole of the Republic, to whom may be added, as corresponding members, twenty-four foreign *savants*, eight to each class. When chosen, the Institute was installed in the Louvre.

Under the laws of 1795 and 1796 the Institute enjoyed much liberty, and hence it was that Napoleon, then First Consul, determined a change. In 1803 was passed a law by which the election of any member had to be approved by the head of the executive power. This arrangement is still kept up. A second article increased to four the number of classes, admitting this time history to a full share of honour; and separated more markedly the different other branches.

In 1806 the Institute, which since its commencement had borne the title of *Institut National*, took the name of *Institut de France*, but it was not till 1811 that it bore that of the *Institut Impérial*. This latter is now no longer in use, and it is again called the *Institut de France*.

The approaching days of the Restoration were, however, to bring mishap on the Institute, and during the first years of the Bourbon's reign, the work of the Convention was erased and the old academies of Louis XIV.'s time were re-established. Henceforth the mere protection of the Duc de Berry or the Duc d'Angoulême sufficed to procure an entry to the Academy. Indeed, in 1816 no less than twenty-two members were expelled from the Institute, among whom were to be found the well-known names of David, La Ranal, Siéyes, Monge, and Carnot. The Revolution of 1830 brought better days to the Institute, though the Government of Louis Philippe determined to leave to time the care of arranging the difficulties that had arisen. In 1832 M. Guizot, then Minister of Public Instruction, recreated the class of the moral and political sciences, giving thus a place to philosophy, to legislation, political economy, and statistics. For a long time, however, the spirit of sect pursued the elections to the Institute, and thus, we find, during the reign of Cousin over philosophy, none but those who entirely agreed with his views entered the sacred pale. From that time to this the Institute has enlarged both in science and reputation.

Thus, what is now called the Institute is composed of these five academies,—the French Academy, the Academy of Sciences, the Academy of Inscriptions and *Belles Lettres*, the Academy of Fine Arts, and the Academy of Moral and Political Sciences; these sit at the well-known building opposite the Louvre on the other side of the Seine, at the building called the Palais de l'Institut or the Palais Mazarin.

Of these, the Académie Française, of which M. Charles Blanc has just been elected a member, is composed of forty members (called popularly the forty *immortals*). They are nominated by election, and the candidates can alone arrive at the position by a personal solicitation, and after this their nomination is submitted to the chief of the executive power, just as in England her Majesty gives her consent to the election of an Academician.

It may be remembered that one of the chief works of this Académie Française is the preparation of the famous Dictionary of the French Academy, the first edition of which appeared in 1694 and the sixth and last in 1835. Until the present century the French Academy, like the Della Crusca of Florence, confined its labours to the preservation of the language; since then, and for the last half-century, it has been opened to all comers in science and art.

The Academy of Sciences, which, at the Revolution, took the first place among the classes then instituted, is composed of sixty-five members, divided into eleven sections; each of these counts six members, with the exception of the geographical, which has only three; in addition to these there are two perpetual secretaries, ten free members, eight foreign associates, and a large number of French and foreign corresponding members.

The Academy of Inscriptions and *Belles Lettres* is composed of forty members and ten free members, its chief work being connected with history and archæology.

The Academy of Fine Arts, which received its present name at the time of the Revolution, when the Academy of Architecture was added to it, is composed, like our own Royal Academy, of forty members; it is, however, divided into five sections,—painting, sculpture, architecture, engraving, and music. It is this academy which directs the various competitions, distributes the annual *grands prix de Rome* in the five sections, presents candidates for the post of professor to the schools of art, and in many other ways directs the fine arts of the country.

The Academy of Moral and Political Sciences, founded in 1795, was suppressed by Napoleon in 1803, nor was it till the reign of Louis Philippe, in 1832, that it was re-established, by the advice of M. Guizot. It is composed of fifty members, and is divided into five sections; in addition, there are five foreign associates, and a number of corresponding members.

In looking hastily over the Annuary of the Institut de France, we find the following distinguished Englishmen have been connected with the body. In the Academy of Beaux Arts, the first name is one very familiar to these pages, that of Professor Donaldson, a foreign associate since 1863. His predecessor, as may be remembered, was Mr. Cockerell. Mr. John Pye, long a corresponding member, died, it will be recalled, in 1874, at a very advanced age,—very nearly, we think, a centenarian. Mr. Herbert has been a corresponding member since 1860; Mr. Fred. Leighton since 1873; the last appointed, Mr. Newton, of the British Museum, a much-esteemed correspondent, since 1866; and Mr. Charles Perkins, of Boston, the author of a work not sufficiently well known in England, giving a very complete history of the earliest days of Italian sculpture.

In the Academy of Moral and Political Sciences, we find as foreign associate the distinguished name of Mr. Gladstone, who has had as predecessors the equally well-known names of Hallam, Grote, M'Culloch, and Lord Brougham.

In the Academy of Inscriptions and *Belles Lettres*, we find as foreign associate Max Muller; as corresponding members, Sir Henry Rawlinson, Layard, Samuel Birch, Lane, and John Muir.

In the Academy of Sciences, as foreign associates, Sir George Airey, Owen, and the late Sir Charles Wheatstone, who had as predecessor Herschel. As corresponding members, Lockyer, Sir Charles Lyell, Hooker, Carpenter, and Adams.

Paris.

PUBLIC WORKS AT SOUTHPORT.

The rapid extension and growing importance of Southport is shown by the number of its companies for building and other constructive works. These companies, which are being organised in quick succession, include the Southport Artisans' and Labourers' Dwellings Company, the Southport and Gathurst Brick and Tile Company, the Southport Botanic Gardens, and Museum Company, the Southport Pavilion and Winter Gardens Company, the Southport Pier Company, the Southport Victoria Pier and Promenade Company, the Southport Zoological Gardens Company, the Southport and Ainsdale Brick and Tile Manufacturing Company, the Formby and Southport Land and Building Company, the Birkdale Park Land Company, the Skelmersdale Land and Building Company, the Ravenhead (Southport) Sanitary Pipe and Brick Company, and the Southport Glaciarium and Ice Manufacturing Company, which took possession last week of the estate on which its works are to be erected, and which are immediately to be commenced. The aggregate share capital of these several companies amounts to upwards of 500,000*l*. In addition there are several hotel companies, bath companies, tramway companies, and water companies, together with other companies of a miscellaneous nature, including a steam laundry company, parcels and luggage company, carriage company, aërated water company, storage company, hydropathic and other companies, representing in the whole a share capital of more than 1,350,000*l*. Several of these companies are already paying good dividends, the last dividend of the Botanic Gardens and Museum Company being at the rate of 10 per cent. per annum; the Victoria Pier Company, 10 per cent.; the Pavilion and Winter Gardens, 5 per cent.; the Tramways Company, 8 per cent.; the Southport Pier Company, 6 per cent.; and the Birkdale Park Land Company, 10 per cent.

THE SURPLUS LANDS OF THE EAST LONDON RAILWAY.

Last week Messrs. Farebrother, Ellis, & Clark sold, at the Mart, a large quantity of the surplus lands and buildings belonging to the East London Railway Company. The property, which consisted of twenty-three lots, is situated partly in Whitechapel, near the Station and London Hospital, and partly in St. George's-in-the-East, but the most valuable portion is in Wapping High-street. The Wapping property included, amongst several other plots of building land, a large area in High-street, situated in close proximity to the London Docks, the Company's station, and also to the Wapping pier of the Steam Ferry Company, whose works are now in course of construction. Before the lot was offered, the auctioneer said that under an arrangement into which the company had entered the purchaser would not be permitted to erect any buildings upon the land for a period of six months, or until the works of the Steam Ferry Company were completed and opened. The property, which contains an area of 12,000 superficial feet, was sold for 4,500*l*. The proceeds of the day's sale amounted to about 11,000*l*.

MONUMENTAL.

Lairg, N.B.—Mr. Westland, of the North of Scotland Granite Works, Inverness, who has just procured a lease of the granite quarry at Dalmore, parish of Rogart, from his Grace the Duke of Sutherland, has been commissioned by the duke to execute a monument, which is to be erected at Lairg, in commemoration of the recent extensive reclamations there. The stone is to be taken from the Rogart rock, and the monument, when finished, will be 33 ft. in height.

The Liebig Memorial.—The sum of 140,000 marks having been collected for the Liebig memorial, the committee have decided to close the subscription lists. A discussion about the site of the projected monument has arisen between the rival committees of Giessen and Munich, the former claiming the statue on the ground that from their university Liebig's fame first issued to the world; the latter, because their capital was latterly the scene of his labours. It has been decided that both towns shall have the same memorial, which shall be cast in bronze.

Wark Mechanics' Institute.—The need of a large hall and rooms for the accommodation of the members of the Mechanics' Institute at Wark-upon-Tyne has long been felt, and, chiefly through the liberality of Mr. Hugh Taylor, of Chipchase Castle, this public want has now been supplied. A neat stone building has been erected at Wark, and, in addition to a large hall, capable of seating about 400 persons, it contains reading and smoking rooms for the members of the Mechanics' Institute, and also rooms for the librarian; and in a neat tower, in the centre over the entrance, is placed a large clock. The total cost is nearly 1,900*l*., towards which Mr. Hugh Taylor has given about 1,500*l*. It is intended to add a large number of books to the library, and 80*l*. have been subscribed towards the cost of doing so.

TEMPLE BAR IMPROVEMENTS.

THE proposed removal of Temple Bar, and the recent debates thereon, more especially as regards the great improvement which could be carried out at this spot, and which in a very few years *must* be carried into effect, remind us that this is not the first time, by a great many, that the widening of Fleet-street hereabouts has been the subject of civic controversy.

The great highway which for so many centuries was the only thoroughfare between the City and Westminster was, as early as the reign of Edward II., one of the most uncomfortable roads to travel by that can well be imagined. In the rainy season there was a continuous interruption to the traffic, through faggots and bushes, and great holes, obstructing the traveller at nearly every few yards, and so bad did it become that a special tax upon wool, wine, and leather had to be levied for its repair. We are told that about this date there were two or three forges in the main thoroughfare, and sundry sheds of a decidedly mean appearance. To have allowed this state of things to continue any length of time is, to our more refined habits of the nineteenth century, a mystery; for, in the reign of Edward III. the banks of the river between Ludgate and Charing Cross had the town mansions of the greatest of our nobility, and their only land entrances were from the Strand and Fleet-street, the roadway of which, in the old chronicles, is described as "full of pits and sloughs, very perilous and noisome" to the passers-by. Five hundred years ago we find Bridewell a palace, Whitefriars a monastery, and the Temple on the eve of being occupied by the lawyers. The Bishop of Bangor lived in Shoe-lane, and the Bishop of Salisbury had his town-house where Salisbury-square now stands. In the Strand, the Bishops of Exeter, Durham, Bath, Chester, Lichfield, and Llandaff, had their "inns," as the mansions were then called; while the Savoy, the site of the great Simon de Montfort's residence, and where John, King of France, was held a prisoner, existed then in all its princely grandeur. The hospital of St. Mary Rounceval stood where subsequently was built Northumberland House. Hence it will be seen that the highway from Westminster through Temple Bar was by no means an unimportant thoroughfare, and yet it was not till a century later that a stone pavement was substituted for the miry road.

We do not propose to go into the history of Fleet-street or the Strand, or exhaust our readers' patience with memorials of Temple Bar; but our object is to give a few collected facts about the improvements which have been carried out in the district which Wren's gateway has now made famous throughout the world. After the Great Fire of 1666 we find, by a plan preserved in the British Museum, that the width of Fleet-street, between Whitefriars and Fetter-lane, was 70 ft., and from Fetter-lane to Chancery-lane, 37 ft. Wren proposed a straight street from Temple Bar to Tower-hill, 90 ft. wide, with a circus in the centre of Fleet-street, from which eight streets were to branch. To those at the present time who are holding strong arguments as to the requirements of Fleet-street for the "still-increasing" traffic, the following quotation from Mr. Noble's book may not prove uninteresting:—"Taking the width of Fleet-street at Temple Bar into calculation,—23 ft. 8 in. the roadway,—no benefit whatever would result in the demolition of the Bar, as, granting that the pier does take up a trifle of the way, fully 6 ft. would be required extra, so as to make a safe passage for another line of vehicles, by giving which, *unless the street were set back some 8 ft. or 9 ft.*, the present narrow pathway for pedestrians would have to be considerably narrowed." From actual measurement of the Bar we find that the width of the street, between the extreme piers by the houses, to be 43 ft. 2 in., and that the opening of the centre arch of the gateway is 21 ft. Now the foot-passenger traffic is to be studied quite as much as the vehicular, and it is well known that the former is very great at this point. For many years past this has been a great grievance, and it certainly would not have been of any use to pull down the Bar,—an expensive and obstructive process whenever it is done,—unless the houses had been taken down too. It was this argument that the Corporation raised years ago, but at the present time it has come to an end by the demolition of the buildings on the north side, and the proposed widening of the street at this part.

Looking at the St. Clement's side of the Bar, it is wonderful to observe the change hereabouts within the past century. The "dismal pass" was for centuries a standing disgrace to London. It may be described as a triangular block of houses extending along the centre of the present roadway of the Strand as far as St. Clement's Church. In Addison's time this narrow outlet from the City was known as "the Straits of St. Clement's." Branching from the Bar, the southern street formed the Strand; the northern, leading to Wych-street, was called Butcher-row. Mr. Diprose tells us it was chiefly occupied by fishmongers, butchers, bakers, and tinsmiths. The houses were wooden and large. The rooms had low ceilings and rickety casements. To the public-spirited Alderman Pickett, London was indebted for the removal of these dens. A brief account of this improvement will no doubt prove of some interest at the present time.

In 1787, at the request of several of the residents, the Alderman presented a petition to the City Council praying the removal of Temple Bar and the block of houses on the west. The subject was referred to a committee, and to this body Alderman Pickett submitted three proposals:—To take down the Bar and sell the materials; to ask Messrs. Child & Co., the bankers, to dispense with the six months' notice which the Corporation *were* (and still *are*) compelled to give them; and to obtain from the City Surveyor a report of the value of the property between the Bar and Essex-street in the Strand. The proposal to pull down the Bar was lost on a division, and the other proposals were thereupon withdrawn. A few months later the Alderman asked the Common Council to appoint a select committee to inquire into the matter, but the motion was outvoted by a majority of seventy-two. Although this persevering citizen was subdued he was not conquered. He sent round a lengthy printed letter, stating that he was not desirous to remove Temple Bar if the improvement could be carried out without doing so. At a subsequent Court of Common Council a motion to apply to Parliament for powers to carry out the scheme was rejected by a majority of thirty-six. At Michaelmas the Alderman asked the Common Hall to agitate the question, but he could not find a single liveryman to second his motion. And in the midst of the controversy up started Pasquin, the poet, with his "Metropolitan Prophecy":—

"If that gate is pull'd down 'twixt the Court and the City,
You'll blend in one mass, prudent, worthless, and witty.
If you league cit and lordling as brother and brother,
You'll break order's chain, and they'll war with each other."

In March, 1789, Alderman Pickett issued a thirty-eight paged pamphlet advocating his views. He described Temple Bar as a nuisance, a screen for filth, and a protection to pickpockets. He proposed to erect in the place of the stone structure "a noble and ornamental pilaster on each side, with chains agreeable to the ancient bars." He exhibited two plans at the Royal Exchange, and headed a subscription list for the improvement with 100*l*. Four years later a committee reported on his plans, and stated that the removal of 125 houses would cost 121,110*l*. Parliament was petitioned, and ultimately an Act was obtained 35 Geo. III., c. 126, June 26, 1795, which allowed seven years for purchasing the property, and ten years for completing the improvement. This Act was, however, only the first of six which were found necessary before the scheme was carried into effect, and in these was included another proposed work—the demolition of fifty-one houses at Holborn Bridge, and the construction of a new street, subsequently known as Skinner-street, and lately removed for the Holborn Viaduct improvements. Alderman Pickett did not live to see his great idea carried out; he died the 17th of December, 1796,—and, if coincidences are worth anything, exactly eighty years to the very day, later, we find the Common Council still holding debate whether Temple Bar shall be taken down!

With regard to the Temple Bar improvements, after the permission of Parliament had been obtained, the "island" of houses so long known as Butcher-row, was levelled at an expense of something like a quarter of a million of money, the Strand was thrown open as we now see it, and the whole of the vacant ground on the north side between the Bar and St. Clement's Church let to contractors for the erection of new building. Now, somehow or other, there was a decided fatality attending the whole of this property from first to last; for, after 150,000*l*. had been expended in new houses, the majority continued unlet for several years. Here was a dilemma never expected, and in the end Parliament was asked to sanction the disposal of the whole estate, and the other houses at Snow-hill, by means of a lottery. We could give an almost endless description of the result: how three lotteries were held—the first in April, 1807,—how they failed, how the property was sold to two speculators for a mere nominal sum, how those gentlemen in turn became bankrupts, how one of the partners obtained his certificate, bought up what remained of the estate, broke his contract, and left the original promoters with a loss of something like 54,000*l*.! We could also tell of many sad scenes that took place over this gigantic failure, but space will not permit. The property, even down to modern times, was never of the best paying description, and the names of Pickett-street and Pickett-place are well remembered to this day. And while the houses were being pulled down for the New Law Courts site, it may be recollected that one fell outwards into the Strand, thus being at the last a trouble to the owners. It is also a curious fact that while the buildings at Temple Bar and Snow-hill were called into existence at the same time, they were also demolished together,—the former for the Courts of Law, the latter for the Holborn Viaduct.

We have thus detailed as briefly as possible the history of the Temple Bar improvements. At the dawn of the present century they created the most lively amount of interest in all classes of society throughout England,—for the whole district between the Bar and Wych-street, extending northwards to Lincoln's-inn, was one of the most depraved, and contained the greatest number of dens of infamy to be met with in London.

The City architect informs us that when the Law Courts are finished, and the street widened, the width at Temple Bar will be about 64 ft. To span this width will require an arch of proportions by no means suited to the thoroughfare. In place, then, of Temple Bar what is to be erected?—for the Corporation, even while they have only lately resolved to pull it down, seem determined to perpetuate the "time-honoured" site. A bar of some sort certainly existed from time immemoral, and from the time of the erection of the present building by Wren, the architect, and Joshua Marshall, the mason, in 1670-72, down to the year 1753, the gates were closed nightly and opened every morning. Such a practice could not be tolerated now, but we cannot see any reason why the site of the old bar should not have a distinctive landmark, which might be ornamental as well as useful. But it is that feature which terribly upsets the Council of the City.

Now, with respect to the "proposed" widening of the thoroughfare leading through Temple Bar, as shown on the plan lately issued by the City Lands Committee, we find three distinctive lines drawn, each of which will very materially widen Fleet-street and the Strand. But two only of the lines are really worthy of notice, and these are:—

1. A straight line from No. 227, Strand, to No. 33, Fleet-street (opposite St. Dunstan's Church), thus entirely or partially removing some forty houses on the south side, while on the north side, Nos. 203 to 193 (the corner of Chancery-lane) would be set back, in both cases, making the width of the street at Temple Bar 70 ft., instead of 43 ft. 4 in. as at present, and 62 ft. at Chancery-lane instead of 55 ft. 3 in.

2. The second, and most desirable "line" is from the corner of Essex-street (opposite St. Clement's Church) to the same place in Fleet-street, at No. 33. This would necessitate the removal of some forty-four houses, but in return we should have the street at Temple Bar 80 ft. wide instead of 43 ft. 4 in.; and at Chancery-lane 70 ft. instead of 55 ft. 3 in., the whole being not a foot too wide to exhibit the architectural façade of the new Law Courts, and any other new buildings that would be thereabouts erected.

But the great trouble at present is how is the cost to be met? Neither the Government nor the Metropolitan Board of Works appear the least desirous to hasten an advance as their share of the million of money which this improvement will cost, and the City, on the other hand, does not see its way clear to expend this amount of the citizens' money, when the improvement will be not so much local as it will be metropolitan. Time, however, passes quickly on, and probably one of these days there will be adopted a plan of such a nature that will be worthy of the site, and will make us feel surprised it was not carried out long before.

a

"TEMPLE À LA VICTOIRE."

Under this title we have before us a publication, printed for private circulation only, which takes us back to a phase in the history of architectural taste and study in this country which is by many now almost forgotten,—when Greek architecture was, by common consent, admitted to be the subject most worthy of study, and of the highest enthusiasm of the modern architect. When Professor Donaldson was a student at Rome, in 1819, the restorations of some of the Classic temples made by his French fellow-students (a practice still forming an important part of the higher curriculum of the French student of architecture) suggested to him the idea of making a restoration not of a single temple, but of such a group of buildings as might have been sufficient for every purpose of celebration and commemoration in connexion with the great games of Greece, and of which the temple of the deity to whom the games were dedicated, and who was what in later ages might be called "patron saint" of the whole, would form the central point. This idea recurred to him in the course of his travel through Greece and Asia Minor; and on his return to Italy he endeavoured to put it into more definite shape. To quote from the Professor's own classic French,—"Je me souviens qu'un soir, après un représentation au théâtre San Carlo, je rentrai à mon hôtel, l'imagination encore impressionée par le spectacle et la musique dont je venais de jouir. Malgré l'heure avancée, je me vins au travail et j'essayai de donner un commencement de réalitée aux idées que m'absorbaient. En deux nuits, j'ens achevé l'esquisse d'un 'temple à la Victoire entouré de tous les édifices nécessaires à la célébration des anciens jeux de la Grèce.' Revenu à Rome, je consacrai toute une année d'études à l'achèvement de ce travail, à l'exemple des pensionnaires de l'École Française, qui sont tenus, pendant leur dernière année, d'exécuter la restauration d'un monument de l'antiquité. Cette obligation, qui était à peu près tombée en désuétude à l'époque dont je parle, a été remise depuis en vigueur avec le plus grand éclat par mes anciens amis Le Sueur, Blouet, Léon Vaudoyer, et d'autres dont le renommée est impérissable. On ne saurait méconnaître combien elle initie à tous les secrets de l'art antique et pénètre les artistes des vrais principes du goût en architecture."

The design when completed was shown to Canova, who had it exhibited at the Academy of St. Luke, and its author was elected a corresponding member of that Institution; and it obtained a gold medal when again exhibited at the Paris Exhibition of 1861. The illustrations, with an "explication historique," written purposely by Professor Donaldson, have been recently published in the *Moniteur des Architectes*, and the essay is now reprinted, with the plan and bird's-eye view of the design, as a folio pamphlet, in "hommage respectueux de l'auteur à ses amis et à ses confrères."

The design is a symmetrically-disposed group of buildings, crossed in front by the *stadium*, which is flanked by a colonnade and ranges of seats for spectators; behind this is an amphitheatre for a *naumachia*, or "sea-fight parade" (as one might translate it), with a naval and a military trophy on either hand of the structure; beyond this the *Academia* and the *gymnasium* facing each other, and between these we proceed to the temple, flanked by quadrant colonnades, as at the Vatican, and in the centre of a wide oblong enclosure, at the further end of which the theatre, overlooking the sea, closes the composition. The architecture is supposed to be of the period of Hadrian, in order to furnish the excuse for combining something of Roman richness and freedom of decorative treatment with the general forms of Greek architecture, and is placed on the slope of Mount Ithome, the beauty of which had struck the author during his travels.

We would rather have conceived the erection as pure Greek, since it is entirely a matter of imagination, and there are no clients to please. The design embodies a noble architectural scheme, more extensive probably than ever existed in Greece at one spot. The whole tone of the essay, and the nature of the architectural idea illustrated, imply a culture wider and more refined than, we regret to be obliged to feel, it would be easy to find illustrated in the younger generation of architects around us.

THE NEW SCHOOL BUILDING IN THE BOULEVARD MALESHERBES, PARIS.

We have long watched with interest the architectural progress of this building, in which we have been especially struck by the copious use that the architect, M. Hector Degeorges, has made of first-rate terra-cotta work. The establishment of this school is the result of an active movement in Paris—indeed, throughout France,—in favour of primary instruction. The *bourgeoisie*, who have been perfectly satisfied with the opportunities offered by the University, have overlooked the sanitary arrangements, which M. Waddington, the Minister of Public Instruction, is disposed to give such special application to, and he has advocated a greater attention to the advantages offered by healthful exercise, such as we in England have long paid almost too much heed to. What the Universities, therefore, have alone attempted to introduce by successive efforts, private initiative is about to realise,—an education and instruction suitable to the needs and aptitude of the child at every age.

The most remarkable creation of this nature, says M. Thomas Grimm in a recent article on this subject, from which, indeed, the following details are borrowed, is, without doubt, that of the *École Monge*, founded in 1869, by a former pupil of the École Polytechnique, M. Godard, and which a clever architect, M. Hector Degeorges, has just rebuilt under exceptional conditions, on some ground near the beautiful Parc Monceaux, in the Boulevard Malesherbes; a neighbourhood which, in course of time, promises to be the most favoured of Paris. Here the editor of the *Siècle* and M. Menier have built magnificent mansions, and here are centreing a number of fine residences.

We will not enter into the details of the method followed out at the École Monge; we will simply mention the considerable part played, with the children, by *lessons of things*, an American importation, which familiarises the mind with ideas of daily application, at the same time facilitating the study of abstract science. What we wish to praise is the building itself, and the talent with which the architect has known how to provide for the wants of the pupils. M. Degeorges has shown himself discreet in his exterior decoration; in revenge he has distributed with true prodigality air, water, and light. Every progress that has been realised within the last twenty years has been applied by him. The whole of the building pivots, so to speak, round an immense covered court, where M. Eugène Paz has disposed the most varied gymnastic apparatus. This court has a superficies of 1,600 mètres. Round it on the ground floor and on the first floor are the class-rooms, with their perfected fittings, maps, pictures of natural history, and glass cases containing mineralogical, botanical, and other specimens, which transform each of these rooms into a small museum for the use of the children.

From the covered court the staircases lead to the dormitories of the second floor, or to the refectory established below the ground floor. It is through the covered court that the pupils pass to go to their separate class-rooms; and it is on this court that open the director's study and the different offices; all the movement is, in fact, concentrated in it. Another court, not covered, of a superficies of more than 3,000 mètres, is destined for the ordinary recreations. Above the class-rooms are the dormitories, each pupil having a separate room. Below, half under ground, well lighted, are the immense refectories, of which the ceilings are in cement, the pavement of tiles, as also the walls. This costly but healthy disposition allows of the whole apartment being completely purified of bad air or dirt; unnecessary is the brush, for all is washed with sluices of water. The heating by hot-water, and the ventilation merit also special mention. The École Monge possesses 180 beds for boarders. It enters into the plans of the founders to fill their house especially with children and young people, preserving at the same time the interior life.

British Museum.—We are very glad to learn that in future the British Museum will be closed, for the purpose of cleanings, &c., during the first week in February, the first week in May, and the first week in October, instead of, as hitherto, during the first week in January, May, and September. We have before now pointed out the objections there were to closing the Museum on New Year's Day and at other holiday times.

A DOUBTFUL POLICY.

The occurrence of another "landslip" in the cutting of the Great Western Railway at Horbury, near Leamington, recalls the circumstances under which that cutting was first constructed, and has been allowed to remain a constant source of trouble and danger. When Brunel designed the railway from London to Birmingham he boasted that he would have no tunnels for the whole distance of 125 miles. The only point along the route where any difficulty was experienced in carrying out this wish was at a place called Horbury, where the line runs through a deep bed of blue clay, lying on high land, and extending for a couple of miles. The highest portion of this clay deposit is at the hundredth mile from London, where its surface is some 150 ft. above the average level of the surrounding country, and of the line of railway on each side. The great engineer elected to make a cutting instead of a tunnel, but the soft nature of the lias soil, and the depth of the cutting, proved such formidable difficulties that he was forced to yield to circumstances, and to bore through a small portion of the bank, and form a short tunnel, about 200 ft. long. This practically is not longer than many wide bridges, and it does in fact form a bridge for the old roadway across the line. But the open cuttings on each side, and particularly on the eastern end of the tunnel, have been a constant source of trouble; year after year landslips occurred, blocking up more or less completely the line of rails. By degrees an enormous excavation was made, which promised to afford immunity from danger, and the opening at the top of the cutting from one side to the other cannot be less than 300 ft. The heavy rains, however, of the last few days have proved too much for the stability of the soil, and many tons of earth have fallen down to the rails beneath, raising them several feet, and entirely covering the "up" line. There is now nothing for it but to continue the cutting still further outwards, or to face it with a thick masonry wall and buttresses.

The bed of clay contains many fossil shells, and is for many reasons—engineering and geological—an interesting locality. The works now going on afford an excellent opportunity to geologists to visit the spot and collect some valuable specimens of the former inhabitants of an upraised inland sea.

INSTITUTE OF PAINTERS IN WATER-COLOURS.

In the winter exhibition of the younger water-colour Society there are some good but scarcely any remarkable works, and a considerable proportion of uninteresting matter. Mr. J. D. Linton contributes several drawings, of which the largest and most important, "The Huguenot" (214), hardly tells its story, and the figures lack character, except that of the soldier waiting stolidly to execute orders upon the victim. A single figure, "The Student" (195), is in the artist's finest manner and feeling; a strong figure clad in black velvet seated in earnest thought, facing the spectator; the expression of concentrated reflection is admirable, and the colouring very rich and harmonious, though sober; there seems something not quite satisfactory in the foreshortening of the left leg. "A Letter to Phyllis" (250), by Mr. Seymour Lucas, is a remarkably clever study of an elderly beau of the *Spectator* stamp laboriously inditing an epistle, his face three parts turned from us, but full of character: the dress and accessories are treated with admirable broad and perfectly effective handling. Mr. Collier's "Burpham Ferry" (201) is not a drawing of such excellence or importance as he is accustomed to exhibit here, but has his usual excellent characteristics of pure and bold water-colour treatment. Miss Elizabeth Thompson sends a large sketch of the "Scots Greys advancing," at Aldershott (144), the line of horses coming rather confusedly over the uneven ground, in a very real sort of manner, though the drawing of the animals seems rough enough in some particulars. Mr. F. Skill's small sketches, "On Yarmouth Beach" (189) and "Ploughing, South Devon" (235), are very good; the latter shows real originality. Mr. Townley Green's drawing of boating men taking their ease in their inn "Up the Thames" (55) shows conscientious study of character, and very careful execution; the types of humanity of the amateur athletic order are very well discriminated, and belong to

a phase of life which has not had due attention from artists of real originality as yet. Mr. C. Green's "Street Musician," with less refinement, has a half-humorous pathos which is noticeable. In landscape Mr. Syer is well represented, but with less originality of style and subject than he has sometimes shown: Mr. Orrock ditto; Mr. Mogford exhibits drawings a little out of his usual beat in effect and scale of colour. Messrs. Absolon, Hargitt, and Harry Johnson are duly represented; Mr. W. L. Thomas's Switzerland drawings are very good, and have some speciality of character; Mr. Hine has an exquisite little sketch of "Cuckmere Haven" (13), a white chalk cliff, topped with long folds of green sward; and Mr. Anmonier, whose name is always welcome, exhibits a beautiful study under the title of "Spring" (68), a bank of primroses for foreground, young shoots of trees and a bit of common land, backed by a sky most tender and atmospheric in its delicate tints. Several drawings by Mr. Hugh Carter, who derives his inspiration as to manner and subject a little from Israels, are worth attention; and so is Mr. Carrick's fresh and healthy-looking sketch of a pastoral scene, under the title of "The Skylark" (205). On the whole, the best things are to be found among the figure subjects, as is often the case at this gallery, in contradistinction to the usual tendency of exhibitions of works in water-colour, which is certainly pre-eminently a medium for landscape.

THE ARCHITECTURAL TREATMENT OF THE ROOF.

BY MR. H. H. STATHAM.*

WE all know how, when we are thinking a good deal of any special subject, it seems to turn up wherever we look, sometimes in a quite unexpected manner. Thus, no sooner had I communicated to our Secretary the title of my proposed paper, "The Architectural Treatment of the Roof," and was doubting whether after all there were anything profitable to say about it, than, in looking quite accidentally over a volume of Mr. Ruskin's Oxford lectures, I came on the sentence "All architecture is but a glorified roof." Here, at all events, I thought, is a text for my sermon, and one which happens exactly to express the point of view from which I propose to make a few remarks on the subject. No one, I trust, has been expecting a practical treatise on methods of roofing this evening. If that were not beyond the scope of my experience, it would at least be quite beyond the limits of an evening's paper. And yet I hope that we shall not be quite unpractical. It is useful sometimes to look back at the first principles of a form of building, and consider why we make it so, how it came into its present shape, and whether and in what way it is capable of improvement, in reference especially (in the present case) to its architectural suitability and expression.

Architecture, then, "is a glorified roof," or, to put Mr. Ruskin's comprehensive formula into plain prose, the object of every building is to cover in a space. Taking it this way, the subject forms the natural complement to that of plan, on which I had the honour of saying a little here last session. You define the area and outline of the ground to be occupied by your building, and the manner in which you propose to divide and arrange the space, so as to make the most of it; and that is *plan*. You then roof it in: and a great deal of the character and expression of architectural structures depends upon the mode of roofing, the material employed, but most especially the relation which the roof bears, in shape and proportion, in constructive principle and material, to the substructure.

The mere proportion, in size or height, between the roof and the walls of a building (in cases where the roof forms a visible portion of the architecture) has a most important effect in determining the predominant expression and character of the architecture; and I touch on this point first, because it brings us back to the first beginning of building. Most of the primitive structures we know of, those which constitute the first beginning of architecture, have no walls, in the strict sense of the word. In his suggestive though rather too fanciful treatise on "The Habitations of Man in all Ages," M. Viollet-le-Duc represents the first rude attempt at a house as constructed by planting young trees in the ground in a circle and then bending them over till their stems met and were secured in the centre. That is a not unlikely theory, confirmed by what we see or hear of the habitations of savage people in the present day. The tent, too, which is one of the earliest forms of habitation, is simply a movable roof. The Esquimaux snow-hut at present is a kind of diminutive dome, placed on the ground. In all these primitive forms architecture is simply a roof, though hardly a "glorified" one. We might perhaps go further than this, and notice that the oldest arched buildings we know of, the tombs or treasuries of the Etruscans, the topes of India (of one of which you may see a model in the Architectural Court at South Kensington) are vaults arched almost from their floor level; but in these cases the form is to be traced, perhaps, partly to the fact that the structures were intended as tombs. But, at all events, we connect the idea of the simplest and most unsophisticated form of architecture with structures such as the tent and the wigwam, which are simply a covering—a roof placed on the ground. Now this is rather a significant fact, because it is probable that it is to a great extent the half-unconscious association with this rude form of architecture which leads us to regard a building where there is a great deal of roof in proportion to the walls as "picturesque" and rustic in character, while for the attainment of a more grand and "architecturesque" effect (to use my friend Professor Kerr's word, which I think a much too useful one to be dropped) we feel that the walls must be raised to a loftier relative proportion. I think this general law will be found to hold good, and especially in those cases where the roof is of a different and lighter material than the walls. If the members of the Association here present were asked each to make a sketch for a country church and a town church, we should be almost sure to find that the majority of designs for the former showed low walls and a high roof, and the latter nearly the reverse proportion; and when we want to give characteristic expression to cottages, rural almshouses, lodges, or farmhouses, we nearly always run the roof up into high gables and ridges, which we feel give the character of homelike and simple picturesqueness more than almost any other expedient.

This picturesque and rustic effect, however, is partly dependent on having roofs of a lighter material than the walls, thus further keeping up the resemblance to the tent and wigwam origin. But this, with all its picturesqueness and character, cannot be regarded as a complete or a dignified form of roofing. The whole system of roofing may be divided into two main sections: roofs which are formed of a different material from the walls, laid on the top of them, and roofs which are of one homogeneous material with the walls and are, in fact, the walls continued horizontally or in an arched form until they shut in the space at the top as well as at the sides. Now, it appears to me that no architecture can be considered to be absolutely complete, or to have attained the highest and grandest monumental expression, which does not include the homogeneous construction of the roof, as a part of the walls. The bridging of the space enclosed with timber or other light and comparatively perishable material placed on the walls, is only a makeshift after all, a shirking of the real problem of the "glorified roof." It is the old tent or wigwam elevated on a stone wall. The Greeks were content with it, and it has been the one weakness of their architecture; their temple roofs have perished long ago, and for many years it was believed that their temples had no roofs and that the Greeks, like the wise men of Gotham, enclosed a space with walls, and left it open to the sky; as if anything that could be called architecture could be produced in that way. The Egyptians, who roofed their buildings, so far as they had a permanent roof, with slabs of stone, achieved thereby a monumental and thoroughly homogeneous character in their architecture, though, of course, the space that could be bridged between supports in this way was very limited, and compelled the use of a great number of supports. This is, perhaps, the earliest and not the least striking instance of the influence of methods of roofing upon the whole style and expression of architecture; for I should think it very doubtful if the forests of columns in the great halls of the Egyptian temples would have existed but for the necessity of numerous supports to a roof where neither the arch nor timber was to be used. The idea may have been extended for the sake of an impressive effect; but it must certainly have originated in constructive necessity. But without the arch, any monumental building in the grandest way and on the grandest scale is an impossibility. It is to the arch that we owe all the greatest achievements of the building art, more especially in raising architecture from its sombre or quiescent character, as among the Egyptians and Greeks, and giving it an upspringing life and energy.

At what time in the history of building the arch was invented no one can say now; probably, however, it was quite prehistoric, and was used long before the Greeks, whose neglect of it in building seems to confirm the idea that their architectural notions were derived mainly from the Egyptians to begin with. Viollet-le-Duc, who has such a remarkable faculty of putting himself in imagination in the circumstances of ancient builders, has given an imaginary sketch of the first introduction of the arch, which is as likely to be true as anything else, and is at least amusing. He credits the Assyrians with the invention, thus: they roofed their houses with a system of reed or bamboo framing with longitudinal bearers laid on it, forming a curved outline, and piled a mud or clay roof on this, which in course of time hardened and was found to be independent of the bamboo supports, which were sometimes removed. Then "a man held in great respect for his knowledge, whose name was Kabu, proposed to build on the curved reeds in the same way as walls are built; that is to say, laying the bricks as you see here; consequently, to pass from the vertical direction in which the wall now lies to the curved direction of the arch, without leaving any angle between the two directions; in a word, to carry the bricks round in a complete semicircle. Thus, the wall would be continued, so to speak, curving over more and more.

It appears that Kabu had much difficulty in getting his idea adopted; the elder men pronounced him crazed, asserting that a wall ceased to stand the moment it deviated from the vertical. Kabu constructed a small arch according to his system, but his model did not please the elders: they told him that though his principle might hold good on a small scale, such a construction executed on a large scale would infallibly break down. Then Kabu had wedge-shaped bricks made of the size of ordinary bricks, and placing them together dry, without the interposition of wet clay, demonstrated by experiment that the bricks would hold together of themselves."

After that there was nothing for it but to banish Kabu, as a man who had impiously contravened the laws of nature, and then proceed to work out his principle: a conclusion of the story which has its parallel in the history of some more modern inventions.

The two great applications of the arch to the realisation of the "glorified roof" were, of course, the dome and the Gothic vault; the mere barrel-vault stands on quite lower ground than these, as it so little affects the design of the substructure, its stability and support being a mere question of thick walls. But the dome and the Gothic vault have the most direct relation to the shape and arrangement and the architectural motive generally of the substructure. The dome is the covering of buildings in which wide central area predominates; the vault, of those in which length predominates. It is not necessary here to go into a description of the principles of the dome and the vault; what I especially wish to remark upon is the difficulty which seems to have been found in carrying out in its integrity the principles of homogeneous building for which these methods of construction appear to furnish opportunity. Although the dome and the vault have been used to such a great extent in Roman and post-Roman architecture, there are comparatively few instances of any note in which the built dome is used as the real roof, irrespective of any other covering; and as far as I know there is not one in which a vaulted roof is so used. Always we have the slated or leaded timber roof as a perishable covering over what is the real built and monumental roof. Perhaps the feeling of most people is that this exterior covering, especially when high-pitched, adds an important element of picturesqueness to the structure, and is the best architectural finish that could be made. But it is most important to take into account the immense effect which habit has upon the judgment in such matters. We are always accustomed to see Gothic churches and cathedrals finished with timber roofs, just as we are always accustomed to see a man finished with a chimney-pot hat; and we get into the habit of accepting each culmination as the natural and inevitable one. But if we could look

* Read before the Architectural Association on the 8th inst.

"TEMPLE À LA VICTOIRE."

Under this title we have before us a publication, printed for private circulation only, which takes us back to a phase in the history of architectural taste and study in this country which is by many now almost forgotten,—when Greek architecture was, by common consent, admitted to be the subject most worthy of study, and of the highest enthusiasm of the modern architect. When Professor Donaldson was a student at Rome, in 1819, the restorations of some of the Classic temples made by his French fellow-students (a practice still forming an important part of the higher curriculum of the French student of architecture) suggested to him the idea of making a restoration not of a single temple, but of such a group of buildings as might have been sufficient for every purpose of celebration and commemoration in connexion with the great games of Greece, and of which the temple of the deity to whom the games were dedicated, and who was what in later ages might be called "patron saint" of the whole, would form the central point. This idea recurred to him in the course of his travel through Greece and Asia Minor; and on his return to Italy he endeavoured to put it into more definite shape. To quote from the Professor's own classic French,—"Je me souviens qu'un soir, après un représentation au théâtre San Carlo, je rentrai à mon hôtel, l'imagination encore impressionée par le spectacle et la musique dont je venais de jouir. Malgré l'heure avancée, je me vins au travail et j'essayai de donner un commencement de réalitée aux idées que m'absorbaient. En deux nuits, j'eus achevé l'esquisse d'un 'temple à la Victoire entouré de tous les édifices nécessaires à la célébration des anciens jeux de la Grèce.' Revenu à Rome, je consacrai toute une année d'études à l'achèvement de ce travail, à l'exemple des pensionnaires de l'École Française, qui sont tenus, pendant leur dernière année, d'exécuter la restauration d'un monument de l'antiquité. Cette obligation, qui était à peu près tombée en désuétude à l'époque dont je parle, a été remise depuis en vigueur avec le plus grand éclat par mes anciens amis Le Sueur, Blouet, Léon Vaudoyer, et d'autres dont le renommée est impérissable. On ne saurait méconnaître combien elle initie à tous les secrets de l'art antique et pénètre les artistes des vrais principes du goût en architecture."

The design when completed was shown to Canova, who had it exhibited at the Academy of St. Luke, and its author was elected a corresponding member of that Institution; and it obtained a gold medal when again exhibited at the Paris Exhibition of 1861. The illustrations, with an "explication historique," written purposely by Professor Donaldson, have been recently published in the *Moniteur des Architectes*, and the essay is now reprinted, with the plan and bird's-eye view of the design, as a folio pamphlet, in "hommage respectueux de l'auteur à ses amis et à ses confrères."

The design is a symmetrically-disposed group of buildings, crossed in front by the *stadium*, which is flanked by a colonnade and ranges of seats for spectators; behind this is an amphitheatre for a *naumachia*, or "sea-fight parade" (as one might translate it), with a naval and a military trophy on either hand of the structure; beyond this the *Academia* and the *gymnasium* facing each other, and between these we proceed to the temple, flanked by quadrant colonnades, as at the Vatican, and in the centre of a wide oblong enclosure, at the further end of which the theatre, overlooking the sea, closes the composition. The architecture is supposed to be of the period of Hadrian, in order to furnish the excuse for combining something of Roman richness and freedom of decorative treatment with the general forms of Greek architecture, and is placed on the slope of Mount Ithome, the beauty of which had struck the author during his travels.

We would rather have conceived the erection as pure Greek, since it is entirely a matter of imagination, and there are no clients to please. The design embodies a noble architectural scheme, more extensive probably than ever existed in Greece at one spot. The whole tone of the essay, and the nature of the architectural idea illustrated, imply a culture wider and more refined than, we regret to be obliged to feel, it would be easy to find illustrated in the younger generation of architects around us.

THE NEW SCHOOL BUILDING IN THE BOULEVARD MALESHERBES, PARIS.

We have long watched with interest the architectural progress of this building, in which we have been especially struck by the copious use that the architect, M. Hector Degeorges, has made of first-rate terra-cotta work. The establishment of this school is the result of an active movement in Paris—indeed, throughout France,—in favour of primary instruction. The *bourgeoisie*, who have been perfectly satisfied with the opportunities offered by the University, have overlooked the sanitary arrangements, which M. Waddington, the Minister of Public Instruction, is disposed to give such special application to, and he has advocated a greater attention to the advantages offered by healthful exercise, such as we in England have long paid almost too much heed to. What the Universities, therefore, have alone attempted to introduce by successive efforts, private initiative is about to realise,—an education and instruction suitable to the needs and aptitude of the child at every age.

The most remarkable creation of this nature, says M. Thomas Grimm in a recent article on this subject, from which, indeed, the following details are borrowed, is, without doubt, that of the *École Monge*, founded in 1869, by a former pupil of the École Polytechnique, M. Godard, and which a clever architect, M. Hector Degeorges, has just rebuilt under exceptional conditions, on some ground near the beautiful Parc Monceaux, in the Boulevard Malesherbes; a neighbourhood which, in course of time, promises to be the most favoured of Paris. Here the editor of the *Siècle* and M. Menier have built magnificent mansions, and here are centreing a number of fine residences.

We will not enter into the details of the method followed out at the École Monge; we will simply mention the considerable part played, with the children, by *lessons of things*, an American importation, which familiarises the mind with ideas of daily application, at the same time facilitating the study of abstract science. What we wish to praise is the building itself, and the talent with which the architect has known how to provide for the wants of the pupils. M. Degeorges has shown himself discreet in his exterior decoration; in revenge he has distributed with true prodigality air, water, and light. Every progress that has been realised within the last twenty years has been applied by him. The whole of the building pivots, so to speak, round an immense covered court, where M. Eugène Paz has disposed the most varied gymnastic apparatus. This court has a superficies of 1,600 mètres. Round it on the ground floor and on the first floor are the class-rooms, with their perfected fittings, maps, pictures of natural history, and glass cases containing mineralogical, botanical, and other specimens, which transform each of these rooms into a small museum for the use of the children.

From the covered court the staircases lead to the dormitories of the second floor, or to the refectory established below the ground floor. It is through the covered court that the pupils pass to go to their separate class-rooms; and it is on this court that open the director's study and the different offices; all the movement is, in fact, concentrated in it. Another court, not covered, of a superficies of more than 3,000 mètres, is destined for the ordinary recreations. Above the class-rooms are the dormitories, each pupil having a separate room. Below, half under ground, well lighted, are the immense refectories, of which the ceilings are in cement, the pavement of tiles, as also the walls. This costly but healthy disposition allows of the whole apartment being completely purified of bad air or dirt; unnecessary is the brush, for all is washed with sluices of water. The heating by hot-water, and the ventilation merit also special mention. The École Monge possesses 180 beds for boarders. It enters into the plans of the founders to fill their house especially with children and young people, preserving at the same time the interior life.

British Museum.—We are very glad to learn that in future the British Museum will be closed, for the purpose of cleanings, &c., during the first week in February, the first week in May, and the first week in October, instead of, as hitherto, during the first week in January, May, and September. We have before now pointed out the objections there were to closing the Museum on New Year's Day and at other holiday times.

A DOUBTFUL POLICY.

The occurrence of another "landslip" in the cutting of the Great Western Railway at Horbury, near Leamington, recalls the circumstances under which that cutting was first constructed, and has been allowed to remain a constant source of trouble and danger. When Brunel designed the railway from London to Birmingham he boasted that he would have no tunnels for the whole distance of 125 miles. The only point along the route where any difficulty was experienced in carrying out this wish was at a place called Horbury, where the line runs through a deep bed of blue clay, lying on high land, and extending for a couple of miles. The highest portion of this clay deposit is at the hundredth mile from London, where its surface is some 150 ft. above the average level of the surrounding country, and of the line of railway on each side. The great engineer elected to make a cutting instead of a tunnel, but the soft nature of the lias soil, and the depth of the cutting, proved such formidable difficulties that he was forced to yield to circumstances, and to bore through a small portion of the bank, and form a short tunnel, about 200 ft. long. This practically is not longer than many wide bridges, and it does in fact form a bridge for the old roadway across the line. But the open cuttings on each side, and particularly on the eastern end of the tunnel, have been a constant source of trouble; year after year landslips occurred, blocking up more or less completely the line of rails. By degrees an enormous excavation was made, which promised to afford immunity from danger, and the opening at the top of the cutting from one side to the other cannot be less than 300 ft. The heavy rains, however, of the last few days have proved too much for the stability of the soil, and many tons of earth have fallen down to the rails beneath, raising them several feet, and entirely covering the "up" line. There is now nothing for it but to continue the cutting still further outwards, or to face it with a thick masonry wall and buttresses.

The bed of clay contains many fossil shells, and is for many reasons—engineering and geological—an interesting locality. The works now going on afford an excellent opportunity to geologists to visit the spot and collect some valuable specimens of the former inhabitants of an upraised inland sea.

INSTITUTE OF PAINTERS IN WATER-COLOURS.

In the winter exhibition of the younger water-colour Society there are some good but scarcely any remarkable works, and a considerable proportion of uninteresting matter. Mr. J. D. Linton contributes several drawings, of which the largest and most important, "The Huguenot" (214), hardly tells its story, and the figures lack character, except that of the soldier waiting stolidly to execute orders upon the victim. A single figure, "The Student" (195), is in the artist's finest manner and feeling; a strong figure clad in black velvet seated in earnest thought, facing the spectator; the expression of concentrated reflection is admirable, and the colouring very rich and harmonious, though sober; there seems something not quite satisfactory in the foreshortening of the left leg. "A Letter to Phyllis" (250), by Mr. Seymour Lucas, is a remarkably clever study of an elderly beau of the *Spectator* stamp laboriously inditing an epistle, his face three parts turned from us, but full of character: the dress and accessories are treated with admirable broad and perfectly effective handling. Mr. Collier's "Burpham Ferry" (201) is not a drawing of such excellence or importance as he is accustomed to exhibit here, but has his usual excellent characteristics of pure and bold water-colour treatment. Miss Elizabeth Thompson sends a large sketch of the "Scots Greys advancing," at Aldershott (144), the line of horses coming rather confusedly over the uneven ground, in a very real sort of manner, though the drawing of the animals seems rough enough in some particulars. Mr. F. Skill's small sketches, "On Yarmouth Beach" (189) and "Ploughing, South Devon" (235), are very good; the latter shows real originality. Mr. Townley Green's drawing of boating men taking their ease in their inn "Up the Thames" (55) shows conscientious study of character, and very careful execution; the types of humanity of the amateur athletic order are very well discriminated, and belong to

a phase of life which has not had due attention from artists of real originality as yet. Mr. C. Green's "Street Musician," with less refinement, has a half-humorous pathos which is noticeable. In landscape Mr. Syer is well represented, but with less originality of style and subject than he has sometimes shown: Mr. Orrock ditto; Mr. Mogford exhibits drawings a little out of his usual beat in effect and scale of colour. Messrs. Absolon, Hargitt, and Harry Johnson are duly represented; Mr. W. L. Thomas's Switzerland drawings are very good, and have some speciality of character; Mr. Hine has an exquisite little sketch of "Cuckmere Haven" (13), a white chalk cliff, topped with long folds of green sward; and Mr. Anmonier, whose name is always welcome, exhibits a beautiful study under the title of "Spring" (68), a bank of primroses for foreground, young shoots of trees and a bit of common land, backed by a sky most tender and atmospheric in its delicate tints. Several drawings by Mr. Hugh Carter, who derives his inspiration as to manner and subject a little from Israels, are worth attention; and so is Mr. Carrick's fresh and healthy-looking sketch of a pastoral scene, under the title of "The Skylark" (205). On the whole, the best things are to be found among the figure subjects, as is often the case at this gallery, in contradistinction to the usual tendency of exhibitions of works in water-colour, which is certainly pre-eminently a medium for landscape.

THE ARCHITECTURAL TREATMENT OF THE ROOF.

BY MR. H. H. STATHAM.*

WE all know how, when we are thinking a good deal of any special subject, it seems to turn up wherever we look, sometimes in a quite unexpected manner. Thus, no sooner had I communicated to our Secretary the title of my proposed paper, "The Architectural Treatment of the Roof," and was doubting whether after all there were anything profitable to say about it, than, in looking quite accidentally over a volume of Mr. Ruskin's Oxford lectures, I came on the sentence "All architecture is but a glorified roof." Here, at all events, I thought, is a text for my sermon, and one which happens exactly to express the point of view from which I propose to make a few remarks on the subject. No one, I trust, has been expecting a practical treatise on methods of roofing this evening. If that were not beyond the scope of my experience, it would at least be quite beyond the limits of an evening's paper. And yet I hope that we shall not be quite unpractical. It is useful sometimes to look back at the first principles of a form of building, and consider why we make it so, how it came into its present shape, and whether and in what way it is capable of improvement, in reference especially (in the present case) to its architectural suitability and expression.

Architecture, then, "is a glorified roof," or, to put Mr. Ruskin's comprehensive formula into plain prose, the object of every building is to cover in a space. Taking it this way, the subject forms the natural complement to that of plan, on which I had the honour of saying a little here last session. You define the area and outline of the ground to be occupied by your building, and the manner in which you propose to divide and arrange the space, so as to make the most of it; and that is *plan*. You then roof it in: and a great deal of the character and expression of architectural structures depends upon the mode of roofing, the material employed, but most especially the relation which the roof bears, in shape and proportion, in constructive principle and material, to the substructure.

The mere proportion, in size or height, between the roof and the walls of a building (in cases where the roof forms a visible portion of the architecture) has a most important effect in determining the predominant expression and character of the architecture; and I touch on this point first, because it brings us back to the first beginning of building. Most of the primitive structures we know of, those which constitute the first beginning of architecture, have no walls, in the strict sense of the word. In his suggestive though rather too fanciful treatise on "The Habitations of Man in all Ages," M. Viollet-le-Duc represents the first rude attempt at a house as constructed by planting young trees in the ground in a circle and then bending them over till their stems met and were secured in the centre. That is a not unlikely theory, confirmed by what we see or hear of the habitations of savage people in the present day. The tent, too, which is one of the earliest forms of habitation, is simply a movable roof. The Esquimaux snow-hut at present is a kind of diminutive dome, placed on the ground. In all these primitive forms architecture is simply a roof, though hardly a "glorified" one. We might perhaps go further than this, and notice that the oldest arched buildings we know of, the tombs or treasuries of the Etruscans, the topes of India (of one of which you may see a model in the Architectural Court at South Kensington) are vaults arched almost from their floor level; but in these cases the form is to be traced, perhaps, partly to the fact that the structures were intended as tombs. But, at all events, we connect the idea of the simplest and most unsophisticated form of architecture with structures such as the tent and the wigwam, which are simply a covering—a roof placed on the ground. Now this is rather a significant fact, because it is probable that it is to a great extent the half-unconscious association with this rude form of architecture which leads us to regard a building where there is a great deal of roof in proportion to the walls as "picturesque" and rustic in character, while for the attainment of a more grand and "architecturesque" effect (to use my friend Professor Kerr's word, which I think a much too useful one to be dropped) we feel that the walls must be raised to a loftier relative proportion. I think this general law will be found to hold good, and especially in those cases where the roof is of a different and lighter material than the walls. If the members of the Association here present were asked each to make a sketch for a country church and a town church, we should be almost sure to find that the majority of designs for the former showed low walls and a high roof, and the latter nearly the reverse proportion; and when we want to give characteristic expression to cottages, rural almshouses, lodges, or farmhouses, we nearly always run the roof up into high gables and ridges, which we feel give the character of homelike and simple picturesqueness more than almost any other expedient.

This picturesque and rustic effect, however, is partly dependent on having roofs of a lighter material than the walls, thus further keeping up the resemblance to the tent and wigwam origin. But this, with all its picturesqueness and character, cannot be regarded as a complete or a dignified form of roofing. The whole system of roofing may be divided into two main sections: roofs which are formed of a different material from the walls, laid on the top of them, and roofs which are of one homogeneous material with the walls and are, in fact, the walls continued horizontally or in an arched form until they shut in the space at the top as well as at the sides. Now, it appears to me that no architecture can be considered to be absolutely complete, or to have attained the highest and grandest monumental expression, which does not include the homogeneous construction of the roof, as a part of the walls. The bridging of the space enclosed with timber or other light and comparatively perishable material placed on the walls, is only a makeshift after all, a shirking of the real problem of the "glorified roof." It is the old tent or wigwam elevated on a stone wall. The Greeks were content with it, and it has been the one weakness of their architecture; their temple roofs have perished long ago, and for many years it was believed that their temples had no roofs and that the Greeks, like the wise men of Gotham, enclosed a space with walls, and left it open to the sky; as if anything that could be called architecture could be produced in that way. The Egyptians, who roofed their buildings, so far as they had a permanent roof, with slabs of stone, achieved thereby a monumental and thoroughly homogeneous character in their architecture, though, of course, the space that could be bridged between supports in this way was very limited, and compelled the use of a great number of supports. This is, perhaps, the earliest and not the least striking instance of the influence of methods of roofing upon the whole style and expression of architecture; for I should think it very doubtful if the forests of columns in the great halls of the Egyptian temples would have existed but for the necessity of numerous supports to a roof where neither the arch nor timber was to be used. The idea may have been extended for the sake of an impressive effect; but it must certainly have originated in constructive necessity. But without the arch, any monumental building in the grandest way and on the grandest scale is an impossibility. It is to the arch that we owe all the greatest achievements of the building art, more especially in raising architecture from its sombre or quiescent character, as among the Egyptians and Greeks, and giving it an upspringing life and energy.

At what time in the history of building the arch was invented no one can say now; probably, however, it was quite prehistoric, and was used long before the Greeks, whose neglect of it in building seems to confirm the idea that their architectural notions were derived mainly from the Egyptians to begin with. Viollet-le-Duc, who has such a remarkable faculty of putting himself in imagination in the circumstances of ancient builders, has given an imaginary sketch of the first introduction of the arch, which is as likely to be true as anything else, and is at least amusing. He credits the Assyrians with the invention, thus: they roofed their houses with a system of reed or bamboo framing with longitudinal bearers laid on it, forming a curved outline, and piled a mud or clay roof on this, which in course of time hardened and was found to be independent of the bamboo supports, which were sometimes removed. Then "a man held in great respect for his knowledge, whose name was Kabu, proposed to build on the curved reeds in the same way as walls are built; that is to say, laying the bricks as you see here; consequently, to pass from the vertical direction in which the wall now lies to the curved direction of the arch, without leaving any angle between the two directions; in a word, to carry the bricks round in a complete semicircle. Thus, the wall would be continued, so to speak, curving over more and more.

It appears that Kabu had much difficulty in getting his idea adopted; the elder men pronounced him crazed, asserting that a wall ceased to stand the moment it deviated from the vertical. Kabu constructed a small arch according to his system, but his model did not please the elders: they told him that though his principle might hold good on a small scale, such a construction executed on a large scale would infallibly break down. Then Kabu had wedge-shaped bricks made of the size of ordinary bricks, and placing them together dry, without the interposition of wet clay, demonstrated by experiment that the bricks would hold together of themselves."

After that there was nothing for it but to banish Kabu, as a man who had impiously contravened the laws of nature, and then proceed to work out his principle: a conclusion of the story which has its parallel in the history of some more modern inventions.

The two great applications of the arch to the realisation of the "glorified roof" were, of course, the dome and the Gothic vault; the mere barrel-vault stands on quite lower ground than these, as it so little affects the design of the substructure, its stability and support being a mere question of thick walls. But the dome and the Gothic vault have the most direct relation to the shape and arrangement and the architectural motive generally of the substructure. The dome is the covering of buildings in which wide central area predominates; the vault, of those in which length predominates. It is not necessary here to go into a description of the principles of the dome and the vault; what I especially wish to remark upon is the difficulty which seems to have been found in carrying out in its integrity the principles of homogeneous building for which these methods of construction appear to furnish opportunity. Although the dome and the vault have been used to such a great extent in Roman and post-Roman architecture, there are comparatively few instances of any note in which the built dome is used as the real roof, irrespective of any other covering; and as far as I know there is not one in which a vaulted roof is so used. Always we have the slated or leaded timber roof as a perishable covering over what is the real built and monumental roof. Perhaps the feeling of most people is that this exterior covering, especially when high-pitched, adds an important element of picturesqueness to the structure, and is the best architectural finish that could be made. But it is most important to take into account the immense effect which habit has upon the judgment in such matters. We are always accustomed to see Gothic churches and cathedrals finished with timber roofs, just as we are always accustomed to see a man finished with a chimney-pot hat; and we get into the habit of accepting each culmination as the natural and inevitable one. But if we could look

* Read before the Architectural Association on the 8th inst.

on Mediæval buildings afresh, and with unprejudiced eyes, or if we place ourselves mentally in the position of a person doing so, I think we should perceive that the monumental effect of a great and important building is seriously affected by crowning it with a perishable material. It is as if the real builder, the *mason*, tacitly confessed at this point, "I can go no further, you must now call in the carpenter and plumber." When the new building which has taken the place of the old Chester Cathedral was in progress, it was proposed to render the metamorphosis more complete by crowning the square centre tower with a high shingle spire. I remember seeing a drawing of the project. It was to me very much the same as if you were to place a bonnet (if such a thing is to be found now) on the head of a marble statue, as an appropriate finish. In the case of the vaulted roof there is a practical as well as an architectural difficulty: the natural upper surface of a vault leaves valleys and pits which render it impossible to accept it in its unsophisticated state as a bedding for a weather-proof covering. In the case of the dome, which leaves a regular and unbroken exterior surface, there is not this difficulty; the difficulty is here a more purely architectural one. The dome, which is to my thinking by far the grandest and sublimest architectural feature that has ever been invented, has almost always presented itself, nevertheless, in the shape of a most formidable dilemma to the architect, in the great difficulty which is experienced in rendering the same dome effective and well proportioned to the substructure both internally and externally. The greatest triumph of the dome is in its interior effect, but this is rather injured than otherwise by making the dome too lofty, taking it too far from the eye, and thereby diminishing its perspective. Externally, on the contrary, the dome almost requires exaggerating in height to produce an effect proportionate to its real height, because its lines are all falling away from the eye, and the result is that a dome always becomes stunted in perspective, except when viewed from a great distance. An extreme instance is the church of St. Sophia, probably one of the finest of existing interiors in effect, as it assuredly is in conception, but which externally, even in elevation, has a squat and dish-cover appearance, which must be still worse when seen in perspective. An increased difficulty in dealing with the dome externally arises from the necessity of having either a counterpoise or a chain at the branches of the dome, to prevent the chance of its rising there, and if a counterpoise is employed, by adding material to the dome at this point, it must almost necessarily be treated in design so as still further to reduce the apparent height externally. (This was illustrated by the section of the Pantheon.) The two ways out of the dilemma are, either to employ a treatment of the dome in keeping with its appearance as a low covering,—to avoid attempting a vertical expression at all externally; or to have one dome for the inside effect and another for the outside. I need not remind you that this last has been the usual way of getting over the difficulty in the architecture of Western Europe; and for this object, not merely two, but even three domes are found one over another. We are in the habit of admiring many of these very much; no one can admire St. Paul's dome, as a mere matter of effect, more than I do; but when we look at the sections of such structures, can we say that the effect is really in any way proportionate to the waste of material and the introduction of a specious but in reality flimsy architectural falsity? Here, again, it is useful to consider things apart from the influence of habit; and surely if we were to be shown for the first time the section of such a dome as that of the Invalides, or some of those which figure in competition drawings (where the dome is often, as Byron profanely said of St. Paul's, "like a fool's cap on a fool's head"), without having been taught to admire it, we should be disposed to say, "What a house of cards built up about nothing!" If we compare even the most sober of these cooked domes, as one may call them, with the Pantheon, we must admit how much more satisfactory to the judgment is the latter, in its solid unpretending reality. Brunelleschi did indeed at Florence build his dome on the same lines within and without, but he had to make it a pointed dome, losing the beautiful effect of the internal hemisphere, and even then it depends on a tie at the weak point; and that is not a complete building which has to be tied together. The moral seems to be that we must not look to the dome for external effect in height, except on a small scale, at least if we would preserve the highest architectural consistency of design and construction; we must regard the dome on a great scale as mainly a feature for internal effect; or if we aim at external effect with it, it must be rather that of stability and repose than of aspiration.

[Reference was here made to a view and section of a Byzantine domed church (St. George at Thessalonica) which had a timber covering carried on a heavy mass of screen-wall built up above the dome, and a method suggested of carrying the sloping roof on light brick or stone spandrels built up on the haunches of the dome at intervals, and with a flat arch in hollow tiling connecting them and forming the bedding for the roofing-tiles; the screen-wall being altered in design and reduced in bulk, and made to appear as a merely ornamental wall. Sketches were shown of the application of the same principle to the roofing of a vault, the ribs being similarly built upon up to the required uniform slope, and tile arches built between them in the same manner. In each case, it was urged, the introduction of any perishable material was done away with, and the building upon the back of the dome * or vaulting ribs really gave increased stability, by weighting them on the haunches; and in the case of the vault, the ribs were really carrying the outer roof, and indicated the construction, instead of referring only to the inner ceiling. A method of avoiding the necessity for varying the radius or curvatures of the diagonal and transverse ribs in a quadripartite vault was suggested, by the intervention of an open circular light at the meeting of the diagonals (carried by the ribs, or by the ribs conjointly with the filling) which cut them off to the same length and height as the transverse ribs. By assuming the same radius also for the wall ribs, the three sets of ribs all spring from the impost with the same curvature; and though, from the wall-ribs being necessarily shorter than the others, the ridge of the transverse vault must be dropped considerably from the centre to the walls, this, in fact, only fell in with the whole scheme by accommodating this ridge to the slope of the roof, which came immediately upon it. The three sets of ribs did not, however, quit the impost at the same *angle*, nor was the carrying of the ring at the meeting of the diagonals quite satisfactory, as being dependent partly on the vaulting surfaces for its support (unless on a very small scale); it might be done more completely by a larger number of ribs arranged at equal angles, looking somewhat like a fan-vault, but in reality differing, as the ribs were the construction, which in the fan-vault they are not. It was observed that in this diagram the transverse rib was altogether omitted, the vaulting surface occupying its place, which might be considered a great heresy; but, in fact, the transverse rib in a Gothic vault was only an ornament after all. In a domical vault such as those of the Angoulême churches which the Association had visited this year, the transverse arch was as important as the wall arch, as it carried the doming; but in the true vault the only real problem was to intercept the thrust of the roof so as to concentrate it at the points buttressed, and the diagonal was all that was really necessary for this: the transverse rib was really nothing in the construction.]

But though we may deprecate the timber roof when used as a cover to what would otherwise be a homogeneous stone building, we certainly cannot deny to it an important place in architecture, the rather as it is in our own country that it has been more especially developed. Our "open-timbered roofs of the Middle Ages" have been a subject of admiration ever since the Gothic revival, though they have now fallen into disrepute, and are almost universally condemned as uncomfortable and dys-acoustic. I am afraid very little can be said in answer to these charges, on practical grounds: on architectural grounds I hold that no form of wooden covering is so good in effect internally as the high-pitched open roof with its massive timbers crossing and recrossing in perspective and making mysterious shadows and half-lights above. Certainly the more recent fashion of a panelled ceiling in cants, with an iron rod painted in corkscrew spirals to tie the concealed principals, is a sad falling off in truthfulness and effectiveness of treatment. I dislike and repudiate the iron tie altogether: as with masonry, so with timber, if you mean to make your roof in that special material, make it in the form which suits that material, and in which it may be warranted to stand secure without bandaging. Timber roofs may be divided into two main classes; those which exercise an outward thrust on the walls, and those which merely rest upon them with a directly vertical pressure. The latter class represents the tie-beam roof, which, of course, so far as the walls are concerned, is simply a beam laid across, and exercising not the slightest disturbing effect upon the substructure. Everything except a tie-beam roof comes under the former class; unless, perhaps, we may consider the low-pitched roofs of the late Gothic period as practically without thrust. For mere utilitarian purposes the tie-beam roof is the simplest and probably the most economical; but it can scarcely be considered as in any sense conducive to architectural effect, and is seldom made part of the design; when it is shown, I think the queen-post form is decidedly more elegant than the king-post. But architectural expression is far better fulfilled by a roof which may be said to spring *from*, not merely to rest upon, the substructure. The entire structure then becomes a complete whole; the roof and walls seem mutually dependent upon one another in the design, the timber roof becomes a part of the architecture, instead of a mere covering laid across. I think this junction between the timber roof and the walls may be more directly and logically effected than it generally is. (Reference was made to an illustration, showing a cross-braced roof springing from arched buttresses turned inwards from the wall, so as to bring the joints of the masonry at right angles to the thrust of the roof-principal.)

This style of roof, with the cross bracing of straight timbers, appears to me to be more architectural than the employment of timber in curved braces (except in the laminated form). The old hammer-beam roof is very rich in effect, but it is anything but scientific; so much so, that it is really wonderful how some of them have stood so long; and I fancy some of them are prevented from pushing the walls out chiefly by the heavy counterbalancing weight of timber which is hung upon them inside. A form of roof which is at present a favourite for churches and other large interiors, with a high collar and long curved braces, is really a kind of modification of the hammer-beam principle, with the advantage that there are fewer points to "give." But these large curved braces, cut out across the grain or scarved together, are really makeshifts. If you wish to use timber in a really characteristic and at the same time strong construction, keep to straight pieces as much as possible; and especially avoid, in open-timber roofs, any such absurdities as arcades and shafts, and such other imitations of stone architecture, which have a most gingerbread effect when introduced in a timber roof. And I hope no one here will ever perpetrate such a monstrosity as what is facetiously termed a "wooden vault." Anything more directly at variance with common sense and architectural propriety it would be impossible to imagine; a wooden imitation of the forms of a masonry construction hung on to the walls like an inverted cradle. The plainest tie-beam roof would be preferable. The defence set up for it is that the Mediæval builders occasionally did so; to which the only proper reply would be, "Then they ought to have known better."

No consideration of the architectural treatment of the roof could afford to pass over the specially modern form,—the iron roof. One class of structure, in particular, has given a great opportunity and impetus to this form of roof,—I mean, of course, the railway-station. How are we to class these great sheds architecturally? Externally, most of us should say that they are simply hideous; nor is it easy to see how they can be made otherwise, consistently with practical and economical considerations. Even these have their effectiveness, however, under some aspects; for instance, there is an admirable etching by Mr. Inchbold, of "Charing Cross," from the opposite side of the river, with the station-roof a black mass against the evening sky. It was published in the *Portfolio* some time since, and I could not have

* It was suggested to me after the meeting, by a member of the Association, that a plan of weighting the dome at certain points was hardly consistent with its true theory, as a building up of complete circular rings of masonry. This is a correct criticism: to make the design and construction actually homogeneous, the dome should be a ribbed one; but the constructive idea may perhaps be modified so as to coincide with the true theory of the ordinary dome.—H. H. S.

believed so much artistic sentiment could be got out of Charing-cross Station. Internally, a well-constructed iron roof has a beauty and fitness of its own, the more so if it is left as simple as possible, and no attempt made to bedizen it with what is called ornament hung on to it,—cast-iron rosettes, and such things. I think that, as in the case of the wooden roof, many of these larger iron roofs would gain immensely in effect if their abutments were better designed, and if they were thus more specially and directly connected with the architecture of the station, where there is any. (The St. Pancras roof, for instance, had its real springing underground, and merely came through the platform. Had it been sprung, however, from massive visible granite abutments, its effect would have been infinitely better.)

But the fact is that, in spite of all that has been said, with apparent good sense and logic, about using the materials of our own time, and so on, iron roofs never can produce a grand, or anything worth calling an architectural, effect; the hard thin lines of the material are so opposed to all that constitutes architectural breadth and repose, besides that the material will not harmonise with anything else. The great extent of the large iron roofs of our day is quite unaccompanied by any corresponding effect on the spectator. Take the Albert Hall as an example: the roof there is nearly the same shape as the centre dome of St. Sophia, and rather larger; but I never heard the slightest evidence of its having produced the same effect upon any spectator.* It is more than twice the diameter of St. Paul's dome, but it certainly never impressed me half so much. It is no use: extend the areas, increase the spans, as you will, you *cannot* produce architectural grandeur with a construction which, in comparison with a stone dome, is merely like a spider's web. As far as architectural grandeur is concerned, you must leave iron out of the category of methods of roofing.

Now, before quitting the subject let us give a moment's consideration to the ordinary everyday roof, on a small scale—the house roof. On this point I might again quote Mr. Ruskin, who, in the same lecture before referred to, observes that the modern architects never know what to do with their roofs, but that until the roofs are right nothing else will be. Fortunately, he is able to tell us how to make them right: "there are just two ways,"—one is always to make them of wood or stone and not of iron; and the next is, to take care that the little roofs are made before the big ones, and that every one who wants one has one. If you can make anything practical of that you are cleverer than I am; the second axiom is philanthropic enough, no doubt, but when an eminent critic tells us we do not know what to do with the roof, and he will tell us, and then presents us with a moral sentiment, it seems to me to do more credit to his heart than his head. Looking at house-roofs as they are, we can see that architecturally it is almost entirely a question of external effect, and that at present we are mainly dependent on timber framing and some sort of rain-proof covering,—slates, tiles, lead, zinc, or felt: the two former predominating. There are two distinct principles that may be followed in placing an ordinary roof on the walls: the one is to spread the roof over the wall so as to form a more or less overhanging cornice or "eaves"; the other is to keep it within the wall line and build a parapet round, so as either to hide the roof or make it look as if sinking down inside the building. The first of these principles is always right, the second nearly always wrong. The roof in this case is the lid of the building to keep out the wet, and you want it put on the top and overlapping, not fitted into the inside. A balustrade round a roof has no sense or fitness unless the roof is flat and is meant to be walked on. If the roof is not a flat one, it should, I think, always show so far as its pitch allows; it should never be artificially concealed. I observe a habit has come in lately, however, of using high-pitched roofs, but putting a balustrade at the foot. This is worse than all: as the balustrade is palpably useless, and contradicts the character of the roof. Now, as to the shape or outline the roof should take when it is visible, we know there is one fashion peculiarly prevalent now,—that of a truncated cone. This, which arose in France, is in reality merely the old high-peaked château roof with the upper half cut off. The Mansard roof scarcely deserves either the practical admiration or the theoretical abuse it has received. It is not a beautiful form at all, but it has been very useful to modern architects when at their wit's end to reconcile piquant outline with economical considerations. The erection of such a mass of timber framing and slate covering at the top of a building, sometimes with two floors of rooms in it, is, however, inconsistent with safety from fire in towns, and still more with architectural dignity and solidity of construction. On the whole, if a high-pitched roof is desired, there hardly seems to be a better way of breaking it up into picturesque outlines than the old fashion of gabling, always provided that the gables have a distinct reference to the plan of the house, and are not invented for the sake of effect. Carrying the roof a good way beyond the walls, either at eaves or gables, I think only has a good effect with low-pitched roofs. In that case something of the piquancy which would be obtained by the high pitch is supplied by this picturesque extension of the roof horizontally; but this is a style of treatment unsuited for towns, and only in harmony with rather rural buildings, in which it often produces a very good effect. As to bargeboards and elaborate finials, they are things only fit to make firewood of; they are simply vulgar, and so are those growths of spiky ironwork we so often see sprouting from the roof. All such things are mere gimcracks, at variance with anything worth calling architectural character. For town houses I cannot help thinking that flat roofs deserve a great deal more attention than they have received. "Oh, but we want skyline!" will be an obvious objection. But it is useless to think of artificially cooking skyline; to do that is beginning at the wrong end. And in crowded towns those who have not any garden space where the sun will reach might find the flat roof an opportunity for an artificial garden much more extended than the little conservatories we see on the porch roofs, or hung from the sides of London houses; and roof parties might even supply the place of garden parties.

Roofs of this description would demand a more solid and homogeneous construction than the sloping roofs, and thus this brings us back to the point before dwelt upon, the desirability of making the roof as permanent as the walls, and of the same class of materials. Of the materials which are used to cover our wooden roofs, tiles are by far the most pleasing and approach most to the character of the materials of which our walls are generally built. It is ungrateful to abuse a material which has been so useful as slate, but it makes a most uninteresting cover to a building, and the very quality which has made it convenient and economical for use, its thin cleavage, gives it a flimsy and unsubstantial appearance. Zinc is too glittering for any repose of effect, but lead might, I think, be used ornamentally on sloping roofs more than it is, with good effect, where cost is not an object. In fact, the artistic capabilities of lead are under-rated with us, and its practical value over-rated, for a big "lead flat" is one of the greatest nuisances possible, most disagreeable to walk on, and always getting out of order. But the question for the future of town roofs is, whether we can contrive to build them in a more solid manner, consistently with economy; for whatever is done with town or street architecture, it is an inexorable condition that it must *pay*. I cannot attempt to consider the possible methods of such a reform in roofing, at the close of a paper already too long; it may be suggested that concrete, even if it does not attract much as a material for walls, may have a part to play in roofing; but I leave the question for more mature consideration, on your part and my own, as an important problem to be solved in the improvement of modern building.

* It seems to me deplorable that Albert Hall should not have been domed as a masonry or brick construction. There is every preparation for it; there is abutment enough between the double walls to carry anything; and it would then have been, even with all its faults of detail, a great building.—H. H. S.

Death of Mr. Joseph Warren, of Ixworth. The death is announced of Mr. Joseph Warren, well known in the Eastern counties for his archæological researches. He was born at Attleborough, Norfolk, May 17, 1792, and in March, 1818, removed to Ixworth, commencing business there as a watch and clockmaker. About 1828 he turned his attention to archæological studies. He contributed an antiquarian map of Ixworth, with portions of Pakenham and Stowlangtoft, to the Proceedings of the West Suffolk Archæological Society.

A MARKET TOWN WITHOUT THE RAIL: WOOLER.

IN another quarter of a century, the number of our market-towns left at the stage-coach period,—that is to say, without a railway,—will, probably, be extremely small. It is not large even at the present day, but we have a few examples, and in them we may note the consequences of their isolation from the network of rails that has drawn so many other places nearer together within the last thirty or forty years.

Wooler is an example of the isolation in question. This was one of the baronies into which Northumberland was divided a short time after the Norman Conquest, and it was given by Henry I. to Robert de Musco Campo, or Muschamp. It lies at the feet of the Cheviot Hills, to the east of Cheviot, and close to a trout stream that winds about on a bright bed of porphyry boulders. It is the only market-town in the Glendale ward, being about eighteen miles distant from the nearest market-town either north or south, and about eleven miles from Belford, and is, consequently, the centre of a large tract of country. This tract is well farmed, and, in many respects, highly favoured, but the absence of the connecting link afforded by railways has entailed a very evident stagnation, both in the development and appearance of the town.

Twenty years ago the writer looked upon Wooler for the first time, and saw a small grey town of small grey houses and shops, and grey pebble footways, close under the grey and green hills of the district. In this grey town there was one wide, irregular street, which served also as the market-place, and in which stood the principal inn. This inn rose above all the other houses, for it boasted of two upper stories, both with a bow-window to them; but it was very shaky and aged, without being ancient enough to recall the old association of the place with Robert de Musco Campo, or, indeed, any of the successive barons who once lived in the ruined castle close by. A great fire raged in Wooler in the year 1722, and this date corresponds with the style in which the inn was fashioned: cosily, but with low ceilings, with here and there a beam depending, narrow ways, stout window-frames, small panes, and substantial balustrades to the dark stairs. The shops on either side and over the way were all small, and most of them were dull and dingy, though a few were bright and smart. A few openings to the right and left possessed a few more houses, and while a branching off of the main street led to the church at one end of the town, the last building at the other end was a lofty Roman Catholic place of worship. It was market-day, and the market seemed to be attended by less than a dozen farmers, none of whom apparently either bought or sold, for there was nothing visible for sale. The writer called to mind that this place was once famous for its large flocks of goats, and that invalids used to resort to it to drink goats' milk. A letter of Sir Walter Scott's is dated from Wooler, and states that he is staying there for that purpose, as a benefit to his health. But there were no goats to be seen. They and the invalids were all gone, and the little grey town seemed lost in a long day-dream. The writer called to mind, too, the reputation of a Wooler worthy, who, at the beginning of the century, enterprisingly discontinued the use of pack-horses for the transport of commodities, and organised a service of wagons, drawn by eight horses, for the improvement of the traffic of the district. But there was not a wagon to be seen. The stage-coaches from Berwick and Alnwick were left, horseless, before the inn windows, in company with a few farmers' gigs, likewise with their shafts thrown back; but there were no cracking of whips and tingling of bells; no cries; no noises; rarely a footfall.

After twenty years, within the last few weeks, Wooler has been revisited. There were the same little low houses, the same shaky old inn, the same poor pebbled footways, the same dull and dingy shops here, and the same bright ones there; the same lofty Roman Catholic place of worship at one end of the town, and the same stiff and square church untouched, untoned, even by time, at the other. It was as though not a breath had stirred, not a stone been turned in all the twenty years,—with one exception. This exception has arisen out of the establishment of a branch to the Alnwick and County Bank, for which enterprise new premises have been built on the opposite side of the road to the inn, and not far from it. It was market-day again. About a

dozen farmers passed in and out of the inn, or stood about the doorway, and one of them held in his hand a small bag containing a sample of corn, a handful of which he showed to two others who stood chatting with him. This was the only outward and visible evidence of any business transaction on this market-day, in this market-town for this wide countryside. Surely, in Robert de Muschamp's day there must have been as much going and coming, more clattering of horses' hoofs, more pomp and circumstance; for the barony was divided into as many as twenty-four members, and each division was held *in capite* by the service of four knights' fees. Surely, so recently as the days of the goat flocks and the invalids, there must have been more going on in Wooler than there is now. This quiet, this dead flatness, must be the result of being left alone, unconnected with the main arteries of the land, and is a fair sample of the unprofitableness of such seclusion.

A word as to the fabric of the church. It seems the barren, hard outlines are to be at last somewhat amended. Tracery is to be put into some of the ill-favoured square-headed windows. A gallery within is to be removed; and, eventually, a chancel is to be added. As it now stands, there are no aisles, no chancel, no porch, no pillar, not a buttress, or string-course; not a line, in fine, to cast a shadow, or make a break upon the spare rectangular block of excellent, but unmeaning, masonry. And at the foot of the rise on which the church stands, the stream we have mentioned purls and winds, and all round the horizon hill after hill breaks into fresh rising and falling outlines, setting the fairest example of movement and variety.

There is one more word to be said as to the consequences of being without the pale of railways, and this word is on the other side of the question. The old low prices for edibles still prevail at Wooler, or have been but comparatively slightly raised. Whereas the smart Railway Hotel, or Station Hotel, of the improving town, charges from 3s. upwards for a dinner, the old, last-century inn we have mentioned provides a good and substantial one, pleasantly served, for 2s., with a lower charge of 1s. 6d. for a post-boy's dinner. Though this is good news for the guest, it is, of course, of a piece with the limited fortunes of the place. Somewhat of the old spirit of Robert Muschamp, who was able to keep Wooler against the Scots and all comers, is evidently wanted at this day, at this place,—not, however, to keep comers away, but to induce them to come. Some strong, united effort should be made to secure the advantages of railway communication with the rest of the world, if the resources of the district are to be fully realised.

LIABILITY FOR THE DESTRUCTION OF COUNTY BRIDGES.

NICHOLLS *v.* MARSLAND.

On the 1st inst., in the Court of Appeal, Westminster, Lord Justice Mellish (with whom were Sir Baliol Brett and Sir Richard Amphlett) delivered the judgment of himself, the Lord Chief Justice, Lord Justice James, Sir Richard Baggallay, and the late Mr. Justice Archibald, the learned judges before whom this case was argued. It was an action tried before the Lord Chief Justice and a special jury at the assizes at Chester, and was brought by the county surveyor to recover the cost of rebuilding nine county bridges which were swept away by a flood on the 18th of June, 1872. The defendant was Mrs. Marsland, the tenant for life of an estate near Macclesfield, and it was alleged that through her default the sweeping away of the bridges occurred. The jury at the trial found for the plaintiff, with damages 400*l*. A rule was subsequently granted by the Exchequer Division to set aside the verdict on the ground that the calamity had occurred, not by any default of the defendant, but by the act of God. That Court gave judgment in the defendant's favour, and their decision was now affirmed.

MEMORIAL OF A LIBRARIAN.

We give an illustration of a sepulchral monument to the late Mr. John Perris, who was for fifty years librarian of the Liverpool Lyceum. It is erected in the Toxteth Park Cemetery, Liverpool, and is well placed near the entrance in Smithdown-road. The material employed is hard Yorkshire stone. The design, which is in the form of a Greco-Roman altar, is of simple character, and consists of a deep plinth and base supporting a large block forming the die, into one side of which is inserted a polished granite slab, containing the following epitaph, written by Mr. Charles Dyall, and inscribed in sunk and gilded letters:—

"Faithful to his trust, his duties were his pleasures. The student and the scholar are his debtors for valuable aid cheerfully rendered.

His long, useful, and honourable career endears his memory to numerous friends, who have erected this monument in testimony of their affectionate regard."

Around the necking of the cornice in large raised letters are the words:—JOHN PERRIS, DIED JAN. XXII., MDCCCLXXII. The whole is crowned by a pediment shaped like an open book as an appropriate symbol, and may be considered to be a successful blending of the realistic with the æsthetic. A dwarf stone kerb, enclosing some flowering plants, surrounds the grave.

The designs were prepared by Mr. Edward A. Heffer, architect, Kilburn.

THE NEW TOWN-HALL OF ERFURT.

As the history of the city of Erfurt, situate in the heart of Germany, and being one of the oldest towns of that country, is lost in the dim past, so the information regarding the origin of its principal buildings, of its churches, convents, and secular structures, is as precarious. As early as 954 A.D., when the Emperor Otto the Great granted certain privileges respecting Erfurt to his son, Archbishop Wilhelm of Mainz, a town-hall is said to have stood "on the street" (now called Market-street) leading from the oldest part of the city to the square in front of the cathedral. It has been proved that on the site now occupied by the new town-hall there stood in 1175 a building for municipal purposes, later chroniclers referring to a great fire extending as far as the town-hall. We learn further from old chroniclers that the town-hall was used already before 1258 as a house of assembly, or "Spelhaus" (modern German *Spielhaus*, playhouse, used for dancing and other festivities), in which Archbishop Gerhard of Mainz is reported to have handed over the care of the administration of the city to a council consisting of twelve noble citizens and owners of neighbouring villages and two aldermen, to whose number were added later four representatives of the commune. In 1330 the treasury buildings and the tower adjoining it, with walls 18 ft. thick, were commenced. The latter, however, was left unfinished. There are later records of additions, alterations, and rebuilding; and thus the venerable pile, in the large halls of which many historical banquets were held, weathered all the storms of succeeding centuries until at last it had more the appearance of a ruin threatening to fall down than the meeting-place of the representatives of a city of 40,000 inhabitants. When, in 1830, in consequence of the outbreak of the French and Polish revolutions, industry and trade in Germany were almost at a standstill, the town-council of Erfurt, to find employment for the numbers of idle hands, came upon the idea of providing work for them by having old buildings pulled down, the tumble-down town-hall being one of them; but its demolition was not completed until 1866. In 1830 a fund for a new town-hall was formed, which, by donations, legacies, and accumulation of interest, had grown in 1869 to 110,000 thalers (16,500*l*.).

By that time the necessity of erecting a new town-hall had become imperative, for the Erfurters had then actually none, and the municipality resolved at last upon building. Among the seven designs sent, they chose that of the architect Sommer. The new town-hall of Erfurt, the subject of our illustration, is in the Gothic style, corresponding to the general character of the city. This style offers not inconsiderable difficulties for secular buildings to the architect. German domestic architecture of the Middle Ages has nothing of the showy decorative abundance of that of the neighbouring countries, nothing of the uncertain seeking after rules for ground-plan and building; the usual Gothic style of Germany is simple, animated by one law. This is testified by the town-halls of Brunswick and Münster, the houses of Nürnberg, the beautiful castles of the Prussian Order of Knights.

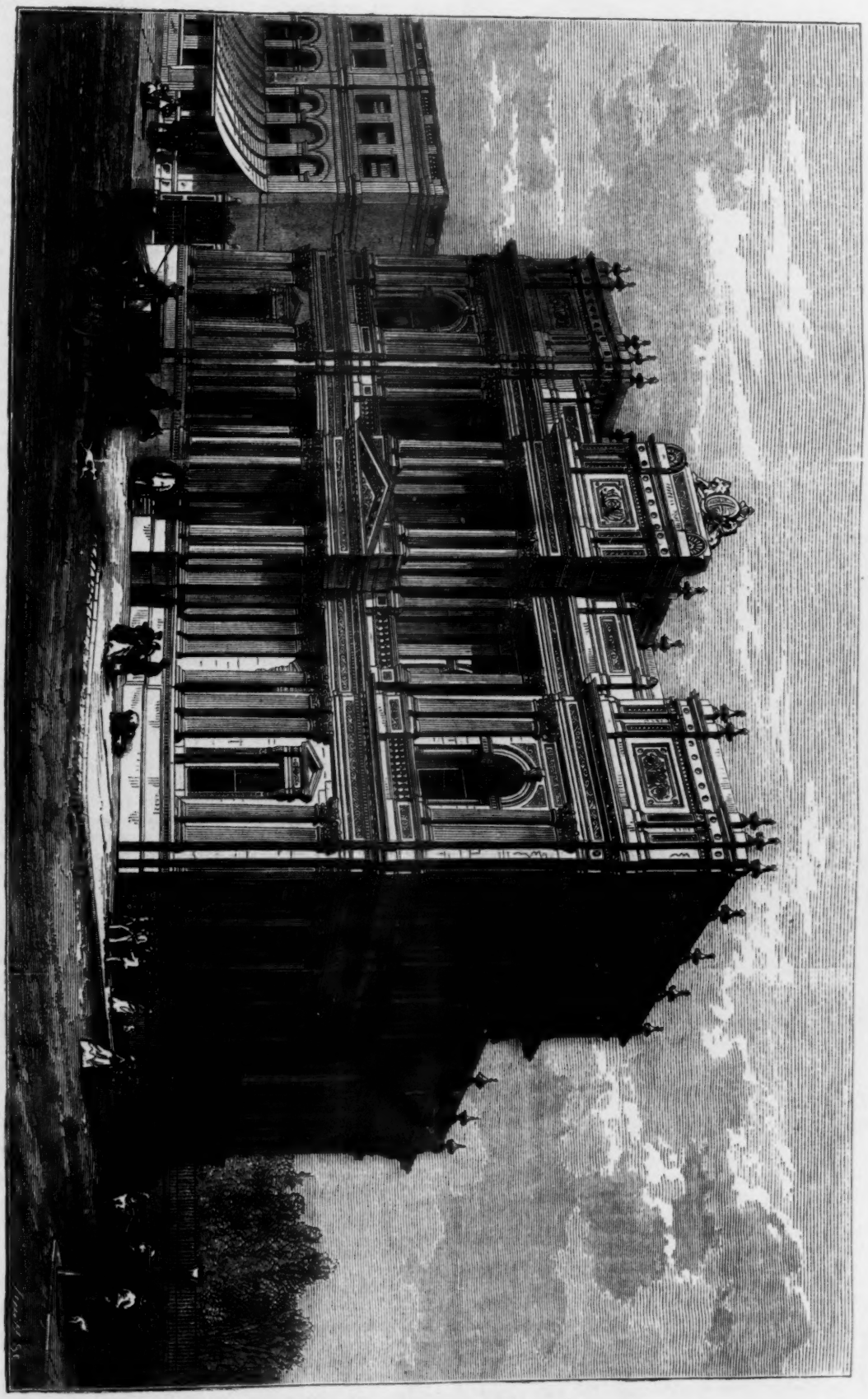
The architect of the Erfurt town-hall followed this German style, combining with it, however, an excellent element of Venetian Gothic: those open pointed-arch galleries in the ground-floor of the façade on the Marktstrasse, behind which is a row of shops. This part is interesting from the circumstance that the principle of an exaltation of the open arcade, which during the Middle Ages was only timidly attempted, for instance in the town-hall of Münster, has been resolutely, and consequent with and in close relation to the other parts of the building, carried out for the first time in a secular building of German Gothic. The back part of the building contains the municipal offices, the upper story the rooms of the town councillors. Corresponding with their more practical purpose, their outside is more sober in keeping as compared with the elaborate principal front, behind which are the rooms devoted to civic festivities. On this side, the narrow front of the building facing the Fischmarkt, is the open porch, with three entrances, occupying the centre three-fifths of the façade. Over this is the large hall, with three groups of windows, arranged in accordance with the window system of the aisles of Regensburg Cathedral. The two buttresses between the groups of windows bear upon corbels of original construction, under neat canopies, the statues, double life-size, of the present Emperor, William I. and of old Frederick Barbarossa, two fitting representatives of the new and the old German empires. The centre window is surmounted by the arms of the city, on both sides of which are battlements, the side gables towering over the other roofs. Thus this centre part shows also outwardly its festive character, by further masses extended forward and aloft, which contribute principally to the

THE NEW TOWN-HALL OF ERFURT, GERMANY.—Herr Sommer, Architect.

imposing impression of the town-hall perspectively. The two other façades of the building, because they front narrow streets, are more simple, but are still in harmony with the style characteristic of the whole structure.

The arrangement of the ground-plan is of no less interest to connoisseurs than to persons not learned in architecture. In the vestibule may be recognised a subtly and practically transformed reproduction of the trefoil-like plan of Rhenish Gothic churches. It forms the entrance to all the stairs, rooms, and corridors of the building. The three aisles, to continue the comparison with Rhenish church architecture, correspond exactly to the treble outer porches, and form at the same time a delicate and simple mediation between the exterior and interior architecture. The constant trisection continues through the whole staircase as far as the great *foyer* of the large hall. Imposing staircases, as used during the Renaissance and the modern time, are scarce during the Middle Ages, which have only narrow winding stairs and large fliers, but no staircases in the modern sense. The stairs in Oxford University and in the castle of Meissen (Saxony) cannot be included. In consequence of the little disposable space that could be spared in the town-hall of Erfurt and the low corridor of the ground-floor, the construction of the staircase had to be attained at the expense of symmetry. The continuation of the stairs in the upper staircase, everywhere free and high, in connexion with the *foyer* of the large hall, on the contrary, is one of the most successful parts of the building. This *foyer*, forming a large hall of three aisles, with its delicate and slender pillars, arches, tracery, the picturesque openings, is a unique piece of work of its kind. The great hall, of nearly square form, is still unfinished, and will be decorated, like the larger wall spaces of the staircase and the *foyer*, with fresco paintings representing scenes from the history of Erfurt, the means for which have already been provided. The ground-story, on the side facing the market, has been fitted up for a restaurant, in which a flourishing trade is carried on.

The new town-hall of Erfurt, besides the ten shops in the ground-floor, and the rooms for a commissary of police and a housekeeper, will contain four large halls as well as fifty-four rooms for offices. It has cost the sum of 750,000 marks (37,500*l.*), including the cost of furnishing.



THE BANK OF SOUTH AUSTRALIA, ADELAIDE.—Messrs. Lloyd Tayler and E. W. Wright, Architects.

THE BANK OF SOUTH AUSTRALIA, ADELAIDE.

THE important building for the Bank of South Australia in Adelaide, of which we give a view, well illustrates the extent to which our colonial brethren are competing with the palatial buildings in the United Kingdom. The design was selected after competition among all the Australian architects, and is being carried out on a fine site situated in King William-street, the most important thoroughfare in the city of Adelaide. The building is faced throughout with stone from Australian quarries. It contains, on the principal floor, the banking-room, 67 ft. long, 42 ft. wide, and 32 ft. high, lighted by eleven large windows, fitted with embossed plate-glass of handsome design, protected by ornamental wrought-iron guards, and having the walls enriched with panelled pilasters and arches, with coupled Corinthian columns, with entablatures to the windows, massive ornamental consoles, and a deeply-coffered and enriched ceiling. The floor of the public space will be of Sicilian marble squares laid diagonally, with polished black marble dots at the junctions, and a bold fret border all round. The fittings embrace a recessed and enriched counter front, with carved consoles and moulded framing, with the upper parts filled in with ornamental bronze panelling. The approach to the public room is in the centre of the building through the vestibule, in which are detached columns and pilasters of fine Devonshire marble, with alabaster capitals, and a variegated marble dado on all sides. There are also some beautifully sculptured panels in the vestibule illustrative of the history of the colony, executed by Mr. Joseph Durham, A.R.A. The floor will be paved with marble to correspond with the banking-room. To the left of the entrance are the board-room, private entrance, and stone staircase. In addition, are anteroom, messengers' rooms, and second staircase; while on the right are the manager's and assistant manager's rooms, inspectors', clerks', and waiting rooms. The principal rooms are floored with Arrowsmith's parquetry, and the private entrance-hall and passages with Minton's ornamental tile-paving. The basement story, which is constructed in the securest possible way, both as regards fire and burglary, and occupies the entire area of the bank, contains strong-rooms in profusion, voucher-rooms, securities room, &c., surrounded by a patrol-passage. This portion of the building will rival many of the best strong-room arrangements in England. The first and second stories of the building are devoted to resident officers' apartments, and have every modern requirement; parquetry has been extensively used in the floorings. The banking-room is heated by hot water, and the other portions of the building by ordinary fireplaces. The various internal fittings, electric bells, heating apparatus, &c., are all of modern character both in style and construction, having been sent out from this country.

The colonial architects are Mr. Lloyd Tayler, F.R.I.B.A., of Melbourne, and Mr. E. W. Wright, of Adelaide. The contractors for the general works are Messrs. Brown & Thompson.

It may be added that all the requirements from England have been specially designed or selected by the Bank's London architect, Mr. Ebenezer Gregg, who has also furnished the complete designs for the internal fittings.

ARCHITECTURE IN LEITH.

LEITH, like most of the old towns on the seaboard of the Frith of Forth, possesses some remains of quaint street architecture of a style which was influenced by that of the low countries with which the bulk of the traffic was carried on. Little care has been taken to preserve these remains, and some of them (notably a remarkably picturesque tower near the harbour) have been swept away.

A few attempts, and these not very successful ones, have been made to impart to new erections somewhat of the character of the old, but they are, without exception, forced and overdone. Most of the modern street architecture is, however, of the Vernacular type, and the public buildings, with the exception of some of the churches, are Italian in style. The Trinity House, situated in the Trongate, the commercial centre of the town, is in this style. The authorities of the Trinity House recently disposed of some dilapidated property adjoining that building, and a large block, to be called Trinity-chambers, now occupies the site, and is in course of completion. The new buildings are of dressed stone, and comprise a basement, four shops on the ground-floor, and two stories and an attic above. In the centre of the shops there is a doorway, giving access to the flats above, it is arched over, and has shafts of polished Peterhead granite in the ingoing with carved caps and an enriched architrave. All the window openings are spanned by semicircular arches, springing from red granite shafts with carved caps. The flanks of the first-floor are varied by oriel windows being projected over the shops. A cornice of good depth, with moulded corbels, runs along the wall head, and the attic windows are grouped so as to produce an effective skyline.

The thoroughfare of the Trongate being rather narrow, an arrangement was made whereby the new building is placed 7 ft. back from the old line of frontage, by which means a desirable improvement has been effected. The buildings were designed by Mr. R. Thornton Shiells, of Edinburgh.

ELECTION OF A DISTRICT SURVEYOR.

AT the meeting of the Metropolitan Board of Works, on the 8th inst., the first business on the agenda was to receive applications from candidates for the appointment of district surveyor for the district of Bethnal-green (East), vacant by the death of Mr. R. Culver James, and to proceed to the election. There were twenty-seven candidates, whose names, and the number of votes received by each in the first voting, are as follow:—Messrs. A. Allom, 8; T. Blashill, 31; A. Bovill, 24; E. Carritt, 17; J. Clarkson, 24; H. H. Collins, 15; A. Conder, 3; J. M. Ferguson, 10; V. J. Grose, 25; F. Hammond, 11; J. Hebb, 5; F. W. Hunt, 18; W. A. Large, 17; W. C. Leonard, 3; G. McDonell, 14; A. Millwood, 4; A. Payne, 18; J. S. Quilter, 11; L. W. Ridge, 7; W. Seymour, 5; T. Stone, 18; W. Tasker, 23; F. Todd, 9; F. Wallen, 22; T. Williams, 17; T. W. Willis, 15; and J. Young, 13. The number of candidates was then reduced to the six who had received the highest number of votes, viz., Messrs. Blashill, Bovill, Clarkson, Grose, Tasker, and Wallen; and the second vote was taken as follows:—Blashill, 29; Bovill, 25; Wallen, 22; Tasker, 18; Clarkson, 15; Grose, 15. On a vote being taken as to which of the latter names should be struck off, the votes for retaining the names were,—Grose, 17; Clarkson, 15. Mr. Clarkson's name was therefore struck off. In the third vote the numbers were:—Blashill, 31; Wallen, 24; Bovill, 20; Tasker, 19; Grose, 9. Mr. Grose's name was struck off, and the fourth vote resulted as follows:—Blashill, 29; Bovill, 21; Wallen, 21; Tasker, 15. Mr. Tasker was therefore out of the running. On the fifth vote, the numbers were:—Blashill, 29; Bovill, 19; Wallen, 18. Mr. Wallen's name being dropped, the contest now lay between Messrs. Blashill and Bovill. The final voting was:—Blashill, 31; Bovill, 9. Mr. Blashill was therefore declared duly elected, subject to the usual conditions, viz.:—

"That the appointment of district surveyor be subject to the condition that he shall make no claim for compensation in case a diminution of income shall at any time hereafter arise from any reduction or alteration of fees by the Board, or from any change of system which may be adopted, either as to the office, its duties, or emoluments, or from any division, reduction, or re-adjustment of districts.

That the appointment of district surveyor be subject to the condition that he shall furnish the Board with information of those cases in his district in which the orders of the Board, or the requirements of the Local Management Amendment Act, 1862, with regard to the width or entrances of streets, or to any building, structure, or erection, or projection therein beyond the general line of buildings are not complied with, and of those cases in which the limitations contained in the building Act, as to the cubical contents of buildings, are exceeded.

That the district surveyor be required to keep his district office open, daily, from ten a.m. until four p.m."

Bromley Science and Art Classes.—The annual meeting and presentation of prizes in connexion with these classes was held recently, at the Town-hall, Bromley. Mr. E. H. Scott presided, and incidentally stated that he had last year great happiness in showing his desire to encourage the classes by a gift of 400*l.*, the interest of which was to be devoted to the purchase of prizes for successful students; but it was now his intention, by the addition of 600*l.*, to make the foundation (with the sanction of the committee) of a School of Art. The report, read by Mr. T. Davis, one of the honorary secretaries, recorded much useful work. Dr. Puckett is the head-master,

THE ART-UNION OF LONDON.

THIS Society,—following its general rule of constantly changing the *pabulum* provided to satisfy the yearly-reviving appetite of its subscribers, and diverging widely in subject from the works of the last two years, which portrayed two most important events connected with the career of England's greatest captains, the victories of Trafalgar and Waterloo,—now selects for its annual plate a far different scene; and, in the words of the Council's report, "addresses a far larger circle; it strikes a chord to which the soul of all Christendom must respond, leading up as it does to one of the most important epochs of the Saviour's life on earth,—the first occasion, namely, on which he appeared as something beyond 'the carpenter's son' dwelling under a lowly roof in Nazareth. At the close of the scene represented in the picture, it is recorded, as the first instance of any peculiarity in the child's nature, that he was found sitting in the midst of the doctors, both hearing them and asking them questions." While, some three years since, the subject chosen was Mr. Goodall's charming picture of "Rebekah at the Well,"—of her who seemed to express, by her looks, a kind of inspired awe at being chosen as the one who was destined to be the mother of "thousands of millions," and in whose seed should "all the nations of the earth be blessed,"—we had one of the most important events described in the Old Testament; we must now go forward nearly 1,900 years, and find, in the present subject, from the New Testament, an incident of the foreshadowed event.

Joseph and Mary, with their friends and kinsfolk had gone up to Jerusalem, according to the annual custom, to be present at the great Feast of the Passover, in the Temple; and on their return, in the course of the second day's journey, not finding their son in the company, they set out to return to Jerusalem seeking him. The moment selected by the painter is that in which, arrived within the walls of Jerusalem, Mary, weary with the prolonged journey over the hot plain of Palestine, and fearfully anxious lest the child might have been kidnapped by some of the tribes which constantly roved through the country, leans on the edge of the fountain, and seeks from the women who come to fetch water for tidings of her son. We are not prepared fully to endorse the opinion expressed in the Council's report, that the figure of Mary "will compare not unfavourably with the conceptions of Raffaelle himself," but there cannot be any doubt as to the touching sentiment, as well as feminine loveliness, in Mr. Armitage's representation of the Virgin Mother.

As to the interpretation of the picture by the burin of Mr. Jeens, we cannot bestow on it higher praise than is conveyed in a letter of Mr. Ruskin to the engraver, in which he calls it a "marvellous engraving," and says, "I hope you will derive some pleasure from my fervent admiration of your work, and the extreme interest taken in it, and the subject it illustrates, by my pupils."

We are informed that the impressions of the plate will be ready for the subscribers on the 1st of February next.

GRANITE BUILDING.

CONTINUING our remarks on this subject, it may not, perhaps, be uninteresting to notice a few Mediæval works in granite. It is, we believe, a somewhat prevalent idea that these exhibit in their design a necessary regard for the intractable nature of the material, and that their general character is bold and simple. Probably the greater number of ancient granite buildings have this character; but it is certain that the more notable examples of churches are particularly rich and ornate, and appear to prove that religious zeal was sufficient in those days to overcome all the practical difficulties in working the material with very inferior tools and machines to those of the present day. Granite is comparatively soft when immediately quarried, and probably advantage was taken of this, induration taking place after the details were worked.

The Church of St. Mary, at Launceston, in Cornwall, is one of the most elaborate Tudor buildings ever erected. Not only are jambs, arches, buttresses, cornices, and parapets, handsomely moulded as usual in this style, but every stone of the ashlar has some ornament or device carved upon it. The ancient cathedral of Aberdeen, dedicated to St. Machar, is the only

cathedral in Great Britain constructed of granite; but the following buildings are of this material, viz.:—Craigievar, Drum, and Crathes Castles in Scotland, and Harlech and other castles in Wales, and the buildings on St. Michael's Mount, in Cornwall. Brittany may be said to be the home of granite building, rich in details, and ranging in date from the twelfth to the sixteenth century. The Church of St. Thegonec is exceedingly handsome, and the churchyard is surrounded by singular buildings, forming a picture of extraordinary architectural richness. At the entrance is a triumphal arch, elsewhere an ossuary, calvary, &c., all in granite. Notre Dame de Folgoat is a fine Middle Pointed church, with transepts, west towers,—one with a spire,—and two magnificent porches, executed in Kersanton stone,—a nearly black basalt, harder than granite to work, but imperishable. The east window is a large circle filled with beautiful tracery, with an open arcade below. Here, externally, in a recess with carved and moulded jambs and a figure of the Virgin, is a holy well. This, according to an inscription, was the cause of the erection of the church.

The granite cathedral of St. Pol de Leon is very complete; and, in addition to western spires, has an eastern chevet and radiating chapels. The western arch of the transeptal crossing carries a large stone sanctus bell-cot, and there is an external gallery at the west end for giving the episcopal benediction.

The Collegiate Church at St. Pol de Leon (Notre Dame de Kreisker) has a central spire said to be 400 ft. high. It is said to have been built by an English architect invited to Brittany by Mary Plantagenet, daughter of Edward III., who had married one of the dukes.

Many other granite buildings in Normandy and elsewhere might be mentioned, but those we have referred to are sufficient to show that in a past age when tools and machinery were very primitive as compared with those of our own times, the workman had no hesitation in carrying out the most elaborate designs in this hard but most enduring material.

Sir,—In a letter addressed to you last week on this subject, Mr. Trickett says,—"It is a pity that parties who supply polished granite do not recommend their clients to wash it at the same time that they wash their windows, for then," he adds, "it might be said of it,—

'A thing of beauty is a joy for ever.'"

This, at all events, is not bad praise, the washing notwithstanding; and as any one can decide for himself whether polished granite really does require any more washing than it gets from occasional showers of rain, by taking a walk of ten minutes round about the Exchange, it is not necessary to discuss the question at length,—a few words will be sufficient. Where rain has access to it, it is as clean as anything can be in this mundane city that does not receive constant attention. Under cornices or other projections, the polish is temporarily deadened, and it would of course be well if owners or tenants would have these parts washed with a sponge occasionally, which is all that this hard, unabsorbent material requires. It is a pity that beautiful moulded and carved details in stone cannot be as easily cleaned.

The desirability of using polished granite for the façades of London buildings is a question of means to ends. It is perfectly well known and acknowledged that stonework is utterly spoiled by soot-absorption. New Portland stone is white; but, with about a year's exposure, the small portion of the New Law Courts already built may be said to be almost black from this cause. Ordinary bricks are little better than stone. Glazed bricks, though not absorbent, are unsuitable for a building of any architectural pretensions, and, therefore, polished granite is the only available substitute for stone if we are determined that our buildings shall look as well years after they are finished as when just completed. This is assuredly a desirable aim. At the present day the cost would be little, if anything, in addition to elaborate stonework, because the various colours of polished granite judiciously disposed by a competent designer would be almost sufficient without further ornament; but, if considered necessary, the incised work seen at Aberdeen would not be expensive, as compared with stone carving, as it can be executed by the steam sand-blast. The result would be, that instead of Cimmerian dulness reigning in our streets, we should have cheerfulness, richness, and cleanliness; and perhaps it is not too much to hope that we should be impressed with the truth of Mr. Trickett's quotation. If, however, while we are waiting the advent of the new architectural era, Mr. Trickett can persuade his own clients to clean their moulded and carved stonework he will do immense service in improving the present dingy appearance of London streets; but,—as nobody knows better than himself,—cleaning stonework is a very different thing to cleaning polished granite. It has been done at a church in Regent-street, and at the Fountain in George-street, Westminster, at considerable cost, and it may be feared it is not likely to be frequently adopted, however necessary it may be.

An Architect.

ARCHITECTURAL ASSOCIATION.

At the ordinary fortnightly meeting of this Association, held on the 8th inst., Mr. H. C. Boyes, president, in the chair, the following gentlemen were elected members, viz., Messrs. G. A. Waters, S. Burmester, B. Daniell, H. Taylor, W. E. Mills, E. C. Shearman, R. T. Morris, E. W. Rich, and H. Russell.

Mr. T. N. Laslett read a short paper descriptive of a new instrument of which he is the inventor and patentee, and to which he has given the name of "metroscope." Mr. Laslett said that in the ordinary practice of every architect it often occurred that existing buildings had to be measured, both for plans and elevations. The plans were easily got at, but it was often a difficult matter to obtain the elevations. The means now resorted to for obtaining the necessary dimensions were such as measuring from ladders, counting the courses of bricks, or clambering over roofs and along ridges, and dropping a tape over while an assistant read it. These methods were more or less accurate, but they were troublesome and even dangerous. The metroscope was designed to obtain the same results more exactly and conveniently. It was intended not only for the measurement of heights, but afforded a means of performing much, if not all, of the instrumental work required in ordinary practice, such as levelling, laying out off-sets, and measuring distances. Of the instruments at present in use for measuring purposes, the most important, next to the expensive theodolite, was the sextant, but there were two objections to its use. In the first place, it measured by degrees, and so rendered necessary calculations or a table to convert degrees into lineal dimensions; and in the second place, the angle subtended by a given dimension varied with its height, i.e., 10 ft. at the base of a building would subtend a greater angle than 10 ft. at the top. Seeing that these objections applied to all instruments reading by degrees, and believing that an instrument, to be of practical use, must be as simple as possible, Mr. Laslett has adopted, in the metroscope, the principle of measuring by two similar triangles, the smaller of which is made on the instrument. In order to measure an inaccessible height, such as the top of a chimney-shaft, two things must be known: its horizontal distance from a given point (called the base-line), and its degree of elevation as seen from that point, which Mr. Laslett calls its "reading," as it was not marked in degrees on the instrument. For measuring an inaccessible distance, readings must be obtained from two suitable points, the distance between which would form a base line. Sometimes this base line formed part of the instrument itself, when it was of course very short, and could only be used for short distances. The metroscope allowed of the choice base line in three positions: firstly, in a vertical line; secondly, lying in the direction of the distant mark, and whether level or not; and thirdly, horizontal, but at right angles to the direction of the object. The metroscope was also useful as a level and as an optical square.

Mr. H. H. Statham then read a paper "On the Architectural Treatment of the Roof," which will be found on another page.

In the discussion which followed,

Mr. Sulman said he had been much interested in Mr. Statham's suggestions for making dome or vault coverings of permanent material, but he failed to see that much was to be gained by such a method. Would such a method of construction be taken for what it was by the observer: in other words, would the *ensemble* bespeak the construction? He thought not. As far as its appearance externally was concerned such a roof might just as well be of the ordinary construction. The chief difficulty in making the external covering of a dome or vault homogeneous with the dome or vault itself, in accordance with Mr. Statham's suggestion, was that the architect would be forced to remodel the whole of his design. As to the use of iron, it was almost impossible to make a stable roof without it, and he (Mr. Sulman) could not see the objection to its use in the form of ties providing that its junction with the wood was shown, and so that everybody could see what it was. He begged to propose a vote of thanks to Mr. Statham for his interesting paper.

Mr. E. B. Ferrey, in seconding the vote of thanks, said the paper was so full of suggestiveness and originality that it was difficult to say anything about it. He could not see any objection either to iron ties or to panelled roofs. When iron ties were used, of course they should not be gilded and made ridiculous for the purpose of attracting attention. In Italy the use of iron ties in roofs was quite common, and he never heard any one complain against them. As to panelled roofs, they were almost a necessity in this country, inasmuch as they made buildings covered with them warmer in winter and cooler in summer than would be the case with roofs open to the ridge. Another advantage of such roofs was that they afforded scope for colour decoration, a matter of great moment now that it was beginning to be generally recognised that churches and other buildings need not of necessity be always bare and Puritanical in internal aspect. He heartily seconded the vote of thanks.

Mr. S. Flint Clarkson said it could not be denied, he thought, that buildings which were roofed with identical or analogous material to that of which their walls were composed were more monumental in appearance than when totally different materials were used for walls and roofing. Buildings constructed and roofed entirely in stone seemed to impress the beholder with a sense of eternity, which was wanting when identity of material was not maintained. He had been much struck with this during the Charente excursion of the Association, when the church at Plassac was visited. He was disposed to fight vigorously against Mr. Statham's suggestion for abolishing the transverse rib in quadripartite vaulting. Even if it were not constructively necessary, it had the great advantage of being a ready means of dividing a long building into distinct bays, which was in accordance with the idea of subordination in design seen in all Mediæval work. With reference to the use of wooden vaults, he thought they were not so utterly indefensible as Mr. Statham would wish to make out. He (Mr. Clarkson) had always regarded with some species of satisfaction one argument used in their favour, viz., that the Mediæval architects could, on occasion, put up with make-shifts. He demurred to the dictum that a balustrade or a parapet at the base of a steep roof was an utter absurdity, for such features would at times save the passer-by from being buried in an avalanche of snow, and might occasionally prevent a stray slate from descending and guillotining him. Flat roofs on ordinary residences would be much more desirable if the ingenious suggestion could be carried out of conducting all our smoke away, as we conducted our sewage, and discharging it from one monster chimney at Purfleet or elsewhere, unless it could be destroyed or profitably utilised. At present, the chimney-pots of London militated against the enjoyment of roof gardens. A great deal of ridicule had been incurred by architects fifteen or twenty years ago by the absurdly-steep pitch they considered necessary for roofs of rustic buildings.

Mr. White could not help agreeing with Mr. Statham in thinking that concrete would eventually become a material much used for roofs and domes. It was well known that the dome of St. Paul's consisted, in reality, of two domes besides the intermediate cone; while the dome of the Invalides in Paris was made up firstly of a perforated dome, then another dome, then a forest of woodwork shaped externally like a dome. He had sat upon the top of that dome, when the lead was last repaired, and could testify to the fact that the oak woodwork had simply eaten into the lead which covered it, and the whole of the lead had lately to be removed and replaced. Surely domes might be built in England in concrete exactly similar to that of the Pantheon at Rome. He was quite sure that there were at least half a dozen special contractors in London alone who would be equal to the task if called upon. In India, on the plains of Delhi, domes were built in the twelfth, thirteenth, and fourteenth centuries, which looked very well exter-

nally as well as internally. There was no deception about them, and they looked like what they were,—honest constructions. True, they had no terminal feature surmounting them. Concrete roofs would certainly be far preferable to the vernacular expanded V roof of the speculating builder; and the distinction between the speculating and speculative builders should always be borne in mind. On the question of roof and skyline, it might perhaps be permitted to refer to the roof of the *Times*' offices. Looking at the top of that building some months ago, it was possible to see only a pediment, half the span and twice the pitch of that of the Parthenon. This pediment contained on the front a clock, and some leaves of the *Wellingtonea gigantea* and other colossal plants; but it had nothing whatever behind it. In a paper which he had read at the Institute about two years ago, on "The Hope of Architecture," and the *Quarterly Review*, he had wished, he said, to criticise that pediment, because he knew it had not been designed by an architect. The authorities at the Institute, however, forbade him to say anything about it, because they did not wish to offend the *Times*. Since then, however, the error had been admitted, and the space behind the pediment in question had been roofed in by slow degrees.

The vote of thanks to Mr. Statham having been carried by acclamation, and the Chairman having made a few remarks, Mr. Statham briefly replied on the discussion, and the proceedings terminated.

A HOUSE PURCHASE AND IMPROVEMENT COMPANY.

A COMPANY was some time ago formed consisting of city merchants and others, amongst whom is Mr. Sutton Gover, chairman of the London Markets Committee, Mr. Aste, chairman of the London Corn Exchange, &c., the objects of which are, as stated in the prospectus, the purchase and selling of productive and progressive house property, and also for improving the dwellings of the working classes, on the self-supporting principle. The capital of the company is 1,000,000*l.*, in 40,000 shares of 25*l.* each. One condition is that the amount of the shares is to be fully paid up as they are issued. It appears that the first issue of shares was 4,000, upon which the full amount of all the shares has been paid up, and thirty-seven different estates, at a cost of 75,000*l.*, have already been purchased. Whatever the company may yet have done in improving dwellings it would appear that it has so far been financially a success, inasmuch as at Michaelmas last interest at the rate of 5 per cent. per annum was paid, and in addition to this a bonus is about to be declared which will increase the dividend receivable by the shareholders to 8 per cent. This has had the effect of bringing up the shares to a premium. Last week a number of new shares were allotted by the directors, and they were immediately afterwards at a premium of 1*l.* per share. We know nothing of the management of the company.

Royal Academy Prizes.—The annual distribution of prizes to the students of the Royal Academy Schools was made on Saturday last. No gold medals were given this year. Two new prizes had been instituted experimentally, viz., a silver medal for a cartoon of a draped figure in chalk or charcoal, life size, subject given, "Boadicea"; and a silver medal for a design for a coin, subject, "The Two Faces of a Crown-piece of the present Reign." The following is the prize list:—Architectural Travelling Studentship, Thomas Manly Deane; Cartoon of a Draped Figure, silver medal, Frederick Hamilton Jackson; Painting from the Life, silver medal, Henry Gibbs; ditto, extra silver medal, Walter Charles Horsley; Copy of an Oil Painting, silver medal, Janet Archer; Design for a Coin, silver medal, [not awarded; Drawing from the Life, first silver medal, L. Lexden Pocock; ditto, second ditto, H. H. La Thangue; Model from the Life, first silver medal, Will. Silver Frith; second ditto, not awarded; Architectural Drawing, first silver medal, Sydney Vacher; second ditto, Eley Emlyn White; Drawing from the Antique, first silver medal, W. Gunning King; second ditto, Edgar Hanley; Model from the Antique, first silver medal, James Stirling Lee; second ditto, not awarded; Drawing executed in the Life School during the year, premium of 10*l.*, P. Homan Miller; ditto, extra premium of 5*l.*, Stanhope A. Forbes.

THE PAST AND PRESENT OF ARCHITECTURE IN IRELAND.*

THE subject on which I propose to address you this evening is "The Past and Present of Architecture in Ireland," and I may possibly add some anticipations as to its probable future. Recognising the presence of so many who, though taking an interest in our art, are not professionally connected with it, it seems most fitting that I should endeavour to deal with the subject in a popular rather than a technical manner. The details of architectural practice, the troubles and difficulties experienced by its professors, however fitting subjects for papers and addresses to be read before purely professional audiences, can hardly be of much interest to the general public; the results of that practice as they appear in the buildings of past and present times must command the attention of all who may be possessed of intelligence and taste. The controversies which agitate the surface of the architectural world are not altogether unimportant to the public; above all, the hard-fought "Battle of the Styles" still waged, with doubtful result, and which, if ever decided, must be by the verdict of the public, and not of architects.

When we contemplate the past of Irish architecture it is necessary to limit the field of observation somewhat, and to relegate a long period to the region of antiquarian rather than architectural interest. Our national poets have been wont (like poets, as usual) to sing of the glories of former times compared with the degeneracy of later ages. Those nations of the world whose past has been great and glorious have generally some other evidences of it besides poetic rhapsodies, and amongst these none are more enduring or conclusive than architectural monuments. Tried by this standard, we must admit that the remains of what I shall call the first period of Irish architectural history, namely, that prior to the Anglo-Norman invasion, do not attest any such great or glorious age as some of the poets would have us to believe; but, nevertheless, they are of deep interest to the antiquary, and we are especially indebted to our countryman the late Dr. Petrie for his investigation and illustrations of them. Other labourers in the same field have followed,—some extending their investigations to later periods; amongst whom Mr. George Wilkinson, the Earl of Dunraven, Mr. Marcus Keane, and the late Mr. Richard Rolt Brash, of Cork, deserve honourable mention. I understand that an important work of the last-mentioned lamented gentleman remained unpublished at the time of his death, which it is to be hoped will appear ere long. One of our members, Mr. Arthur Hill, of the same city, has devoted much time and attention to the geometrical delineation of these monuments, and has published clear and complete measured drawings of Cormac's Chapel, Ardfert Abbey, and other churches. Another young Irish architect has carefully measured and published drawings of Holy Cross Abbey, county Tipperary,—a most interesting specimen of the ecclesiastical architecture of Ireland during the Mediæval period, or that between the Invasion and the reign of Elizabeth. It is much to be desired that these separate and scattered illustrations could be collected and added to, so as to present a complete series of illustrations of the ancient and Mediæval architecture of the country, to do for it something like what the works of Britton and Billings have done for that of England and Scotland. Although possessing little of the magnificence of contemporary structures in France and England, the remains of Mediæval architecture in Ireland are distinguished by a simplicity and truthfulness of design and construction, a skilful adaptation to the local materials, and by some marked differences of style from contemporary buildings in England, which make them deserving of close study. It is gratifying that so many of them have been recently placed under professional supervision by the Government, and it is to be hoped their preservation from further ruin and decay will be the first object. Restoration it is almost dangerous to speak of, ending so often as it has done in total confusion and obliteration.

The next or third period of Irish architectural history, comprising the reigns of Elizabeth and the Stuarts, deserves more attention than has yet been bestowed on it. In this country, as well as in England, this period was distinguished not so much for the ecclesiastical as for the domestic buildings erected in it. The fewness and comparative poverty of the resident nobility and gentry of Ireland during that period, and the restless and disturbed condition of the country prevented the erection of any such extensive and sumptuous piles as Wollaton, Longleat, or Hatfield, and some attempts that were made in Ireland to rival those stately mansions seem to have been sadly interrupted; nevertheless there are some to be met with in different parts of the country highly interesting as architectural studies, and not the less so because they are often not altogether dissociated from the families to which they originally belonged. I may mention Leimaneigh Castle, in the County Clare, the ancient seat of the O'Briens; Donegal Castle, Ballyvourney Court, County Cork; and some others illustrated in Mr. Wilkinson's work, some of which would be well deserving of restoration and occupation, if but some of our local nobility and gentry could be induced to recognise the superior interest attaching to such a restoration, than to the erection of a brand new stuccoed pile, or mock feudal castle, which so many of them seem to think the acme of architectural excellence.

The fourth period into which I shall divide my subject (and it must be borne in mind that all such divisions are necessarily imperfect and conventional) is nearly coeval with the eighteenth century. This is doubtless a very important period in the political as well as architectural history of the country, and the one is intimately connected with the other. A well-known writer and participator in the transactions of the latter part of the century, the late Sir Jonah Barrington, characterises that century as having witnessed two events of no small importance, viz., "the Rise and Fall of the Irish Nation." There are some of us who presume to think that the historian should have carried his researches a little further back as to the rise, and left the history of the fall to be written by posterity. However that may be, it is unquestionable that most of our really great and noble buildings were erected not only during that century, but during the precise period of it which Sir Jonah selects for his history. The growing powers and importance of the Irish Parliament, culminating in the Declaration of the Volunteers in 1782, and ending in the Act of Union in 1800, had a most important influence on the architecture of the time. During that time, the more settled and prosperous condition of the country enabled the nobility and gentry to erect more stately and sumptuous mansions on their estates than had ever existed before. The holding of Parliament in Dublin required their attendance there for a great part of the year, and hence led to the erection of lines of stately town residences that still impart so much of dignity to our capital city. The Parliament House itself, great part of the Castle, the Law Courts, Custom House, and other important public and national edifices, bear witness that, whatever may have been the misdoings of the old Irish Parliament, it was not deficient in architectural taste, and displayed an honourable ambition that the public edifices of Dublin should not suffer by comparison with those of any other European capital. The late Lord Macaulay, while asserting in one of his essays that "there never was a more corrupt and tyrannical Parliament than that which sat in College-green," is obliged to admit in one of his letters that "the public buildings of Dublin (the work of the same Parliament) would be thought magnificent even in Paris." Whatever good it may have accomplished, the Union certainly inflicted a terrible blow on the development of architectural taste in Ireland, by at once sending the cream of our nobility and gentry to spend their winters in London instead of in Dublin; but it will be my pleasing duty to acknowledge shortly that the blow, however terrible, was not fatal, and that in the last period into which I shall divide my subject, namely, that since the Union, no small amount of progress in architecture and the kindred arts has been witnessed.

The eighteenth century formed an important epoch in the architectural history of England as well as of Ireland. The Renaissance or revival of classical architecture can scarcely be said to have been complete in the preceding century there; but in this it was fully accomplished, and it is remarkable that during the whole of the century we see or hear nothing of any style being practised but one. The early part of the seventeenth century was distinguished by a large admixture of Gothic elements with Classic; the portion of the nineteenth which has elapsed has seen the adoption of nearly every style that has ever

* By Mr. W. Fogerty, president. Read at the meeting of the Architectural Association of Ireland, December 7.

appeared; but during the eighteenth century, in Great Britain and Ireland at any rate, but one style prevailed, which we may call Anglo-Classic or Hiberno-Classic, according to locality. It was certainly a great advantage to the architects of that time that they had not to fritter their energies on an endeavour to master the principles and details of several styles, but, having thoroughly acquired those of one, could devote themselves to pushing it to the utmost point of excellence of which it was capable.

At two periods in the present century it became the fashion to decry without mercy everything that belonged to the style just referred to. One was early in the century, when the discoveries of Stuart and Revett led to the introduction of Greek forms and details; and the other somewhat later, when the works of Rickman, Pugin, and others led to the Gothic revival. All that was not Greek in the first case or Gothic in the second was looked on as beneath contempt. The beauty of it was that the Gothic revivalists had no mercy on the Greeks any more than on the sober Anglo-Classicists before them; and, after many years of bitter controversy, it was suddenly discovered that there was great merit in certain buildings of the early part of the eighteenth century, and, under the name of the "Queen Anne style," the style of that century seems likely again to become the fashion.

Independently of these vagaries of fashion, it must be allowed that the most substantial, splendid, and conspicuous monuments of architecture in Ireland are those of the eighteenth century. It was generally admitted that the public buildings of Dublin at the close of that century (as they appear in the drawings of Malton) were rather beyond than behind what might be expected for such a city. The Castle then assumed its present form, with the exception of the chapel (added in the next century); the western front, chapel, hall, and library of the University were erected; the Houses of Parliament, Custom-house, Law Courts, and Exchange all erected; though at the Union considerable alterations were made in the Parliament House to adapt it to the present purposes of a bank. Albeit, the work of several successive architects, it is a building of which Ireland may well be proud. Classical in detail, and symmetrical in arrangement, it is yet original in composition, and produces an effect peculiar to itself, and different from any other Classical building I know of. We never see St. Paul's without being reminded of St. Peter's; the Capitol at Washington reminds us of both; nor can we see the Madeleine without thinking of the Parthenon; but the Bank of Ireland is unique. I never can cross College-green without a good look at it. The Custom-house stands as a splendid memorial to the genius of James Gandon, whose life by Mulvany is well worthy the perusal of all architectural students. The Four Courts, originally planned by Thomas Cooley, were completed by him. Until the completion of the new buildings now in progress, London will have no such law courts; and the distinguished architect engaged on these latter, however ultra-Gothic in his tastes, was glad to borrow a few suggestions from the Dublin ones, although now about one hundred years old. The Royal Exchange (now the City Hall), also the work of Cooley, has been thought worthy of reproduction by our American cousins in Philadelphia.*

CORPORATION MARKET AT KNOTT MILL, MANCHESTER.

The design for the new covered market which the Corporation of Manchester propose to erect at Knott Mill has just been selected by the markets committee, and will be submitted to the city council for consideration. About three months ago, the corporation invited Messrs. Magnall & Littlewoods, Messrs. Barker & Ellis, and Messrs. Corson & Aitken, architects, of this city, to compete for the best design for the market. Plans were prepared and submitted to Messrs. Mills & Murgatroyd, architects, also of Manchester, who were asked to report to the markets committee upon their respective merits. Messrs. Mills & Murgatroyd have selected the design of Messrs. Magnall & Littlewoods as being the most suitable in every respect.

The land proposed to be covered by the Corporation to form the new market is divided into two plots, separated by St. Matthew's Church. That bounded on the west by Lower Byrom-street is the larger, and contains in the aggregate 4,400 square yards; the other, nearer Deansgate, contains 2,757 square yards of nett land. The construction of the market, as proposed by Messrs. Magnall & Littlewoods, will consist of cast-iron columns and pilasters, and the supports at each angle of the market, and on each side of the main avenues and entrances, will be square cast-iron panelled pilasters, which will give solidity to its general appearance. Internally the columns will be round, so as to offer as little obstruction as possible. In laying out the land the ground has been kept as clear as possible of obstruction by the formation in the centre of each plot of a main avenue 50 ft. in width. The height of the roof to the main avenues will be 35 ft. from the ground to the louvred part, which is to rise 3 ft. 6 in. higher, and is to be filled in with louvres for ventilation. The roof to this portion is to be elliptical in outline, constructed with wrought-iron principals, tied with wrought-iron rods, which will be at the height of 29 ft. from the ground in the centre. An alternative proposal which Messrs. Magnall & Littlewoods have made is, that a wrought-iron lattice construction, principally of elliptical form, of 50 ft. span, should be erected over the main avenues. This roof would not require rods, but would involve an additional cost of about 1,000*l*. The cost of the market complete, including columns and foundations thereto, for covering the whole of the land, would be 18,000*l*.

* To be continued.

NEW FLOUR MILLS, SUDBURY.

The opening of the large flour-mills erected by Mr. J. F. Wiseman, of the Borley Flour Mills, on a part of the site of the Chilton Brickworks, on the Cornard-road, a few hundred yards from the town of Sudbury, was celebrated by a public dinner. The portion which has just been opened is, however, only the first part of a large and important undertaking. The remainder is being proceeded with, and will probably be completed next spring. The building which has just been opened is 45 ft. in length, 28 ft. wide, and about 65 ft. high, and consists of four stories above the ground-floor. The walls are built of white brick. The foundation is 6 ft. wide, and up to the first story the walls are 2 ft. thick; the walls of the next two stories are 21 in. thick; those of the next story 18 in., and above that to the gable 14 in. On the ground-floor are six pairs of 4-ft. stones driven by spur gear, with an upright shaft connecting all the machinery above, and also meal and endless conveyors and elevators. In addition to the six pairs of stones are two pairs of 4-ft. stones on pedestals, and driven by a strap from the upright shaft. The stage or upper floor contains the sack tackle, bran-dusting machine, by Huntley, Holcomb, & Co., and offal-separator, also two sets of mill elevators.

The engine-room is situated at the back of the main building, and in this is a pair of compound engines, by Beal, of Greenwich, and of thirty horse-power nominal. The boilers were supplied by Messrs. Ware & Co., of London, and the whole of the machinery was fixed by Messrs. Barton & Stearn, engineers, Sudbury, and Mr. H. Brewer, of Long Melford.

The mill is constructed in three parts, so that in case of fire one part might be destroyed and the others left intact. The shaft, which is a few yards from the boiler-house, is 82 ft. high, and the opening at the top is 2 ft. 2 in. in diameter. Adjoining the mill at the east end is an open brick reservoir, 30 ft. deep and 10 ft. in diameter, at the other end are the counting-houses.

The builder of the mill was Mr. Wanford.

THE NATIONAL GALLERY.

Sir,—I am induced, through reading a letter in your last number, to write to you upon the subject of the ventilation of the new portion of the National Gallery. It would be presumptuous on my part to say the arrangements for that purpose are not all they should be; in fact, they have not been carried out properly yet. What I wish to call your attention to is that, as far as I can ascertain (having no access to the roof) the whole of the appliances in the east, north-east, and north rooms (now respectively numbered 12, 13, and 14) are all closed, consequently the foul air cannot escape from above nor can the fresh air enter from below. Where so many valuable pictures are placed, and where hundreds, and occasionally thousands, of visitors assemble, the ventilation is of great importance,

A Visitor.

"STRAITS OF BROMPTON."

MARLBOROUGH ROAD.

At a meeting of the Chelsea Vestry, on the 5th, Mr. Lawrence said he wished to say a word relative to the corner of Marlborough-road. An article had appeared in the *Builder* of last week, and also one on August 12th last, relative to the matter. It was really a very great question, and if the scheme could be carried out it would be attended with great advantages. It was suggested that the Marlborough-road should be widened at the Fulham-road end. One of the houses, a draper's shop, happened to be in Kensington parish, but all the others were in Chelsea. It was a matter which was certainly beset with difficulties, and it had been before the Board and the Improvement Fund Committee several times, but nothing had been done. There was a suggestion in that week's *Builder* that the parishes of Chelsea and Kensington ought to combine, and endeavour to effect the improvement, thus making a direct thoroughfare from Chelsea to Kensington. He moved the reference of the subject to the Improvement Fund Committee.

Mr. Compton seconded the motion, and hoped that the Metropolitan Board would be communicated with on the subject, as the improvement, if carried out, would be almost of a metropolitan character. The motion was carried.

The unanimity displayed leads us to hope that the effort will be made with a will, and so have a chance of success.

A NEW BRIDGE AT GLOUCESTER GATE, REGENT'S PARK.

The St. Pancras Vestry are about to construct a new bridge near Gloucester Gate, Regent's Park. At the meeting of the vestry last week, a report was presented by the General Purposes Committee, reporting that the First Commissioner of Works had at length agreed to give the Vestry the required extent of ground for the construction of a new bridge at Gloucester Gate, and recommending that the works should be proceeded with as early as possible.

Mr. Richards, in moving the adoption of the report, said that for twenty years the Vestry had been striving to get this new bridge constructed, and he congratulated them on having at last been successful. It would be of the greatest advantage to the parish, and they would now have a direct road between Park-street and Gloucester Gate.

The adoption of the report was unanimously carried.

In answer to a question, the Chief Surveyor said that the plans would be ready in about a month, and as soon as they were approved by the Metropolitan Board of Works tenders would be advertised for, and the works would be at once proceeded with.

A NEW ROMAN CATHOLIC COLLEGE AT CLAPHAM.

A new college for the ecclesiastical training of students for the Roman Catholic priesthood is about to be erected in Clapham-road. It is to be established under the auspices of the Rev. Dr. Danell, the Roman Catholic Bishop of Southwark, who has purchased a freehold plot of land, with a mansion thereon, in the Clapham-road, for the purpose. The purchase-money for the land and buildings which have been secured is stated to be upwards of 10,000*l*., and the erection of the new college will be immediately commenced. In carrying out the works it is intended to retain the existing mansion, which is to be utilised as far as possible for the purposes of the college. The plans which have been prepared include, in addition to alterations in the mansion, which is large and spacious, the building of a new wing in the first instance. These portions of the intended college are expected to be finished and occupied for educational purposes in the course of a few months, but the entire building will not be completed until about the close of next year.

Architectural Union Company.—At the general meeting of this company held on their premises, 9, Conduit-street, last week, a dividend of 6 per cent. was declared after carrying 10 per cent. of the net income to the improvement fund, and setting apart the usual sum for fine to City for renewal hereafter.

COST OF LONDON SCHOOL-BOARD'S SCHOOLS.

AT a recent meeting of the Board the committee reported the cost of the following new schools and additions to schools. The statement shows in what cases the authority granted to the committee to sanction extras up to 10 per cent. on the contract amount has been exceeded:—

Accommodation.	Name of School.	Expenditure authorised by the Board.	Extras authorised by the Committee.	Cost per Child.
	NEW SCHOOLS.	£.	£.	£. s. d.
502	Laystall-street, Gray's-inn-road	5,172	522	11 6 10
785	Creed-place, East Greenwich	9,040	507	12 3 3
832	Regent-street, Deptford	7,333	262	9 2 7
582	Sydenham-hill-road.....	6,228	47	10 15 8
753	Hindle-street, Shacklewell.....	7,283	324	10 2 0
596	Jessop-road, Brixton	6,108	351	10 16 8
607	Garratt-lane, Wandsworth	5,773	299	10 0 1
548	Lower Park-road, Peckham	5,605	778	11 12 11
1,105	Mantua-street, Battersea	8,989	1,457	9 9 0
878	Neckinger-road, Bermondsey.....	8,174	320	9 13 6
837	Manor-road, Bermondsey	8,646	133	10 9 9
841	Albion-street, Rotherhithe	8,322	454	10 8 8
841	Knapp-road, Bromley	7,483	532	9 10 7
546	Glengall-road, Cubitt Town	6,332	50	11 13 9
	ENLARGEMENTS.			
168	Cook's-ground, Chelsea	1,590	31	9 2 11
619	*Original School*	5,576		
277	Victory-place, Walworth	2,450	635	10 0 7
1,036	*Original School*	10,084		
100	Aldenham-street, St. Pancras	1,124	28	7 14 3
1,016	*Original School*	7,451		
	ADDITIONS AND IMPROVEMENTS.			
	Marlborough-street, Blackfriars-road	555	148	...
	London-fields, Bethnal-green	1,476	78	...

MORE NEW BOARD SCHOOLS FOR LONDON.

THE election of the members of the London School Board having resulted in a large majority favourable to the policy of the old Board, who had given notice of their intention to purchase land for the erection of twenty-eight additional new Board schools in different parts of the metropolis, it may now be taken for granted that the building of these additional schools will be carried out. The total quantity of land proposed to be purchased is 67,521 square yards, or between 14 and 15 acres in extent. The quantity of land to be purchased in the Chelsea division is 16,730 yards, or about 3½ acres, for the erection of six schools; in Finsbury, 2,137 yards, for two schools; in Hackney, 8,264 yards, or nearly 2 acres, for six schools; in Marylebone, 5,334 yards, for three schools; in the Tower Hamlets, 3,672 yards, for two schools; in Lambeth, 17,110 yards, for six schools; in Southwark, 5,135 yards, for four schools; and in Greenwich, 8,539 yards, for four schools.

BAD CONSTRUCTION OF THE NUNHEAD NEW RESERVOIR.

As is generally known the Southwark and Vauxhall Water Company have for some three or four years past been engaged in the construction of new works, to meet the requirements for the needed additional supply within their district, and an enormous outlay of capital has been incurred in constructing new reservoirs at Nunhead, and laying down several miles of new mains to connect the reservoirs with the company's intake. These works are now all but completed, and until within the last few weeks it was expected that the additional supply of water would be furnished to the neighbourhood of Nunhead, Peckham, and the surrounding districts by filling the new Nunhead reservoirs. An unforeseen circumstance has, however, prevented this, and it now seems quite uncertain as to how soon the additional supply contemplated by the construction of the new works can be furnished. It appears that the company have recently taken into their service a new engineer, and according to the half-yearly report of the company which has just been issued, this gentleman has made statements of a very serious character respecting both the construction of the Nunhead reservoir, its situation, and the nature of the ground upon which it is placed. According to the directors' report to their shareholders, he states that he is neither satisfied with its mode of construction, its position, nor the geological strata upon which it rests, and that it will require much consideration on his part before he can take upon himself the responsibility of filling the reservoirs with water, and bringing them into active use. The precise defects of the reservoirs, whether in point of construction or otherwise, are not stated, but it is to be presumed that these will all be explained to the shareholders at the meeting. In the meantime the reservoirs remain empty.

NON-FULFILMENT OF CONTRACT.

AT the last meeting of the Urban Authority of Portsmouth, the subjoined clause from the Roads and Works Committee's report was moved by Mr. Jepps and seconded by Mr. Cunningham:—

Your committee recommend the rescission of the resolutions passed by the Council on the 6th of October last, accepting the tenders of Mr. J. S. Gabriel, for granite and chippings, and Messrs. Lees & Co., for lamp-columns, in consequence of their failing to enter into the necessary agreements for carrying their respective contracts into effect, and they recommend the acceptance of the following tenders in their place:—

A. P. Manuelle, Seething-lane, London,—
Broken granite, per ton..... 11s. 6d.
Granite chippings, per ton ..... 7s. 6d.
Jukes, Coulson, & Co., Clement's-lane, London,—
1*l.* 12s. per column.

Mr. A. Nance, jun., said it appeared that directly the contractor found out his tender was the lowest he withdrew from it. Mr. Gabriel was by no means a small business man, and ought to be exposed for treating the Council in the way he had done. So far as competency was concerned, Mr. Gabriel was as able to carry out the contract as Mr. Manuelle.

Mr. Cunningham divided the blame between Mr. Gabriel and the Authority. When the contract was accepted it should have been signed before any order was given, instead of which, granite was sent for. It would not go through the proper gauge, being 2½ in. instead of 2 in., and when it was sent back by the borough engineer, Mr. Gabriel refused to forward the proper size under 1s. a ton more than the tender. There was no legal claim on Mr. Gabriel unless a stamped agreement, which would cost 10*l.*, had been used.

The clause was ultimately agreed to.

BREACH OF CONTRACT.

AT Worship-street, Thomas Edwards, Thomas Rutter, and James Higgins, cabinetmakers, were summoned before Mr. Bushby by Messrs. Lawes, cabinetmakers, of 65, City-road, for breaches of contract. The cases were heard separately, but all arose out of the same matter. The evidence of Mr. J. W. Benn, a partner in the firm, showed that the defendants were in their service as cabinetmakers. A mahogany wardrobe was required to be made, and the defendant Edwards had the estimate and plan of the work handed to him. He agreed to make it according to the plan for 4*l.* 2s. 6d. It appeared, however, that on the plan being shown to other men in the shop it was voted a new kind of work, and they said it should not be done under 5*l.* 2s. 6d. The men and the defendants were members of the same Society, which ruled that the work should not be done at the agreed price. Edwards accordingly threw it up, although he had signed the usual contract for the job. The work was then offered to Rutter, who signed for it, but the shopmen refused to allow it to be done, except at their price, and he also threw up his contract. After some time Higgins signed the contract, but he was also coerced into breaking it. The work, it was said, still remained undone. Under these circumstances, Messrs. Lawes & Co. took the present proceedings, and claimed 10s. damages from each defendant. Mr. Benn wished, however, to inform the Court that such a sum was merely nominal, and the proceedings had been taken to show the men that they could not be allowed to rule the shop.

Mr. Bushby ordered Edwards to pay 10s. and 2s. costs.

Rutter said he should have gone on with the work if the men in the shop had not threatened to break his head and "be on to him."

Mr. Bushby said that in using threats the men had committed a very great offence, and if brought before him they would find that the law was strong enough to reach them. He would be happy to grant summonses, if applied for. If, however, men like the defendant consented to such "bullying," and had not spirit enough to resent it and act an independent part, then he supposed such systematic terrorism would go on.

Mr. Benn said that the Society upheld the men in the matter, and had boasted that they could pay all the damages.

Mr. Bushby ordered Rutter to pay the damages claimed, with costs, and also made a similar order in the case of Higgins. The money was paid for the three defendants almost immediately.

Alfred Horne, of 8, Axe-place, Hackney-road, also appeared to a summons taken out by Messrs. Lawes for breach of contract in somewhat similar circumstances, and was ordered to pay compensation to the amount of 6*l.*

BUILDERS' ACTIONS.

LACEY *v.* VILLIERS—VILLIERS *v.* LACEY.

THESE were cross actions, in the Queen's Bench Division, arising out of transactions between the parties in relation to the pulling down of the old and building of the new Canterbury-hall, Westminster-road.

Mr. Day shortly opened the case. The plaintiff, a builder, carrying on a large business in the City of London, entered into a contract with Mr. Villiers, proprietor of the Canterbury Hall, by which he was to take down the old well-known hall, and build and reconstruct the new Canterbury for an agreed sum of 9,000*l.*, of which 7,500*l.* was to be paid in cash, and the balance, 1,500*l.*, was to be represented by the old materials of the building: and disagreements having arisen between the parties, it was in reference to the 1,500*l.* for the old materials that the action was brought.

The Judge, Field, having looked into the particulars and seen that the case involved questions of complicated accounts, and exhibited masses of figures, suggested that the matters in dispute would be far more likely to be settled to the satisfaction of the parties by submitting them to a referee than by a jury, and advised counsel that in his opinion would be best course for plaintiff and defendant to take.

Counsel, having conferred with their respective clients and their solicitors, agreed to his lordship's suggestion; and the case, withdrawn from the jury, went off accordingly for settlement by a referee.

Litigants in such cases, knowing the course usually pursued, might save themselves expenses by agreeing to reference without first going into court.

COMPENSATION CASE.

BIRD *v.* THE LONDON SCHOOL BOARD.—A NEW SCHOOL AT MILE-END.

THIS was a compensation claim in the Sheriffs' Court, before Mr. Under-Sheriff Burchell and a Special Jury, by Mr. Bird, of Portman House, Globe-road, Mile-end, for land belonging to him near his residence required for the erection of a new school.

The claimant had resided more than sixty years in Portman House, and he had considerable property in the neighbourhood. He had a garden and orchard, and the property would be depreciated by the erection of a school, which would be a "nuisance" to persons in the immediate neighbourhood. The land could be utilised in building, and would realise a considerable sum.

Several valuers were called, and the estimate was about 5,000*l.*, and a question was raised as to the extent required by the School Board. No evidence was given on the part of the Board. It was proved that land in and near London was rising in value, and it was said that builders expected about "ten per cent." for their money. For the Board 1,718*l.* was named as the full amount of the claim that could be made for the property.

The Jury awarded 3,000*l.*

Lichfield Cathedral.—Soon after Archdeacon Bickersteth's appointment to the deanery, he expressed his great desire to advance the work of improvement of the cathedral another stage, and to commence the renovation of the exterior, more especially the west front, which, though originally one of the most beautiful façades in the kingdom, is now for the most part faced with Roman cement. This cement was applied to it about fifty years ago, and is now beginning to perish in several places. The restoration will be directed by the cathedral architect, Sir G. G. Scott, R.A., the Dean's object being to reproduce the whole in stone in accordance with the guiding details, which still remain in several places, more especially the north-western tower.

GLASS ROOFS FOR LONDON.

Sir,—I notice in your issue of the 25th ult. a reference to the glass roof over my offices in Bunhill-row, by Mr. Knight, in a paper read at the Royal Institute of British architects.

As I have had many inquiries respecting this mode of construction, and it has now stood the test of time, having been erected when the offices were built in 1872, perhaps you would kindly allow me to take the present opportunity of stating my experience in the matter.

The roof proper is flat, of iron and concrete faced with cement, the underside of the roof forming the ceiling of the bedroom below; a parapet-wall is carried up about 3 ft. high all round, and on this wall a sill is laid; from this sill circular bars spring and meet on the centre, where there is a raised hopper for ventilation; sashes open at each end, but no ventilation is provided at the sides.

An inner wall, about 2 ft. 6 in. from the parapet wall and parallel with it, forms a tank running round the house with a clear floor-space in the centre. This tank is filled with mould and planted with vines.

It is not quite correct to describe this as the Paxton principle, as Mr. Knight has done. Paxton's Crystal Palace roof is on the ridge and valley principle, one curved iron rib being larger than the next, and straight wood bars reach from one to the other, forming a succession of ridges and valleys. This system would greatly reduce the space in the roof of a London house, and mine is a simple curved roof, very similar to my illustration in my weekly advertisement in the *Builder*. The bar being of wood, bent on a principle patented by me, where, by steaming the bar, bending it whilst hot on a saddle in three pieces, and screwing them together whilst there, the outer member of the bar acts as a truss on the inner member, and the tendency to spring back is almost entirely obviated; as an instance of the adaptability of wood thus bent to its purpose, I may mention that after being fixed now for four years not a single square of glass has been broken or even cracked through any movement of the bar. The glass, I may mention, is not bent, only common straight glass is used, and by having a deep rebate in the bar the curved line alone is seen giving so much the effect of bent glass that a close inspection is necessary to convince people the glass is not really bent.

I am thus particular in describing the construction of my roof as I find an objection is raised on the score of expense and the cost of repairs. Its first cost would be about 2s. 6d. per foot superficial for the wood and glass, and the cost of repairs would be perhaps a coat of paint every two or three years.

And now as to what can be grown. I have said I have planted vines. These are doing very well. I have already gathered one or two bunches of grapes, and I hope ultimately to produce as good a crop as can be produced in an unheated vinery of the same size, although I am only seven minutes' walk from the Bank of England.

I say unheated, but, of course, it could be heated very easily, being on the top of the house. A boiler in connexion with any fire-place in the house might be connected with it.

The advantages of such a mode of construction, if generally adopted, would be a very great improvement in the roofs of our houses. As glass is to slates and tiles, so would these improved roofs be to existing ones in those dull November days. The room on the roof would be the brightest room in the house. With the streets of London getting more crowded daily, the children of the care-takers, who must live as best they can in town, would have a playground cheerful and safe, and after the labours of the day are over, the room on the roof, with its vines overhead and its peeping bulbs below, is a pleasant beneficial change that any one having once enjoyed would not readily part with.

I am quite sure if these roofs were better known, they would become more general, and I shall be very pleased to answer any questions that may be addressed to me on the matter.

W. H. Lascelles.

SALT IN STONE.

1. Would sandstone, quarried in a sea cliff, about 7 ft. below high-water level, be so saturated with salt as to be unfit for using in building a dwelling-house, the mortar being made with fresh-water sand, and the walls battened?
2. Would it be practically possible to put such stone through a process which would get rid of the salt; and if so, what is that process?

L.

A CHURCH IN THE FOREST.

A church dedicated to St. Andrew has been opened in the Forest of Melksham, in the county of Wiltshire,—a wild and uncultivated district. This church in the forest is not only erected in the sylvan retreat of "Woodpecker tapping at the hollow beech-tree," and the lair of foxes, but must look for a congregation from a very scattered district.

To the liberality of the Rev. E. L. Barnwell this little forest church and its primitive woodcutters are indebted, at a cost of 3,700*l*. The site was given by Mr. T. J. Heathcote, and other friends have helped to embellish the edifice. The architect is Mr. Charles Adye, of Bradford-on-Avon, who also designed the super-altar.

The edifice—70 ft. by 20 ft.—is capable of seating 180 persons, which, with but a few seats for the aged, &c., are all unreserved. St. Andrew's in the Forest is built in the thirteenth-century style, and of freestone. It consists of nave, chancel, and vestry, the chancel arch springing from foliated corbels. The stained-glass windows, by Mr. Powell, of Whitefriars, are grand for so small a church. The communion-table, of oak, is a fac-simile of that in the church of Bois Sainte Marie, Soane-et-Loire, France, of the eleventh century. The font is a copy of the thirteenth century one of Lymshall, Herefordshire. Why?

SANATORIUM, BANTRY BAY.

In a recent brief article of the *Builder* respecting the beautiful retreat of Glengariff, as compared with other watering-places, it was omitted to state that, in addition to its wide range of incomparable scenic beauties, the degree of temperature during winter and spring is 3½° higher than Montpellier, although situated more northward by 9°; besides that, as a place of summer resort, it is milder and more equable; for here there is no sunstroke, no malaria, no mistrale, no bise: in fact, the native vegetation proves the mildness of climate, as we find the arbutus and other flowering shrubs in richest luxuriance, decorating its wild and varied vales, hill-sides, and scarped rocky passes.

Open to a bay of over twenty miles in extent, having a width varying from four to seven miles, bordered by picturesque and craggy coasts—Bear Island at the entrance of its wide, deep waters; Garinish Isle and Tower midway; and then Glengariff Bay, with several Romanesque inlets, of which the sanatorium and hotel command the richest views, this site is unequalled by any other resort for invalids, being certainly more temperate during summer than Nice, or any of the Mediterranean seaports, which cannot be tolerated by tourists for residence after April.

It is stated in Prince Pückler-Muskau's Tour so far back as 1828:—"The climate is the most favourable possible for vegetation; that all sorts of evergreens, azaleas, rhododendrons, and even camellias, stand abroad during winter; and that dates, pomegranates, magnolias, lyriodendrons, attain their fullest beauty."

All medical men of note in Ireland now recommend their patients in consumption, laryngial or bronchial diseases, to visit Glengariff Sanatorium; and Dr. Gilbert Smith, of Harley-street, in 1875 wrote that in his own individual case he had derived great benefit from a two months' happy sojourn at the Eccles Hotel there.

Dr. Hudson, ex-president of Queen's College, Dublin, states:—"I first became acquainted with the place when suffering from a laryngial cough, which, however, rapidly yielded to the influence of its mild climate. Since then I have induced many invalids to resort to it, with decided advantage in every instance. Glengariff appears to me to be suited to those who require a mild climate, with shelter from prevailing winds."

The climate of this part of Ireland is attested by the class of plants which grow luxuriantly in the open air; and the meteorological table of the district proves that the average temperature exceeds London by 7°; Torquay, 6°; Cove, 4½°; Undercliff, 5°; and Penzance, 4°; the difference being still greater in the spring months. As a summer resort, the numerous drives through magnificent scenery confer a greater value upon Glengraiff, which, although there is yet no railway nearer than twenty miles, may be reached from London within eighteen hours,—the grand drive to Killarney lakes (*viâ* Kenmare); the pass of Keminegh, and Gougane Borra; the harbour of Bearhaven; the celebrated caves in Bantry Bay; the Sugar-loaf Mountain; Hungry Hill and waterfall; Adrigole harbour; the Priest's Leap; the Cloonie and Inchiquin lakes; Glanmore Lake and Cobduff Mountain: such a continuation of enchanting views is not to be found in any other country. Thus lofty mountains (from 2,000 to 3,000 ft.), with interesting hills, crags, and ravines, protect the north, north-west, and north-east of the Sanatorium, which is provided with 40 acres of grounds, having extensive walks and plantations; so that complete shelter from wintry winds is secured by nature, which also attempers the sea by the influx of the warm Gulf Stream tiding in at this south-west extremity of Ireland, from the Gulf of Mexico to Bantry Bay.

The existence of such a *refugium patientorum* has been but lately appreciated in Ireland, and being wholly unknown in England, these few particulars are given by T. H. H.

RISK AT THAMES DITTON.

Sir,—Perhaps there is no church in Surrey that claims the attention of archæologists more than that of Thames Ditton, having, for one thing, escaped damage in Cromwell's time; for here we find brasses, 1534, seven or eight about this date, some Norman-French on one of the pillars, and an old lance-shaped window, also a peculiar arch, a Norman font found buried in the church, and, as Murray says, a remarkable monument to the Seargeant Confectioner of Henry VIII., and various other interesting relics. Notwithstanding all this, it is doomed to destruction either by churchwardens or some other Solon. There are three gaslights, with three jets each, placed from the wall within a foot of the ceiling,—if to burn the ugly gallery down alone, so much the better, but to destroy this ancient church would be as atrocious as burning Canterbury Cathedral. T. Browne.

UNHEALTHY BUILDING AT BATTERSEA.

The evils of cheap building by those needy and speculating builders who run up houses merely to sell, had an illustration last week at the meeting of the Wandsworth Board of Works. A letter was read from the Rev. John Toone, vicar of St. Peter's, Battersea, drawing the attention of the Board to the fact that in Palk-road, Battersea, houses were being built upon rubbish and dust-shoots, without basements, and with boarded floors close to the earth, and that in scarcely any of the houses was there any provision for ventilation beneath the floors. The letter elicited a discussion amongst the members of the Board, but with no practical result, the generally expressed opinion amongst them being, that in the present state of the law as to building within the metropolis they had no power to remedy the evils complained of. Mr. Cox, one of the members of the Board, suggested that the attention of the Metropolitan Board of Works be drawn to the manner in which modern houses were often built in the Battersea district, on which the chairman remarked that the Board were perfectly aware of the evils caused by the practices by builders complained of in the letter. They had endeavoured, at the cost of thousands of pounds, to remedy it, but their hands were tied. The Metropolitan Buildings Act seemed only to provide against fire.

The Proposed Aquarium at Birmingham.—The plans of this projected building have been printed and privately circulated. According to a Birmingham paper, they show the aquarium tanks skirting the ground-floor of the central hall, of which they form the outer walls. The tanks are twenty-one in number, the largest being 50 ft. long and spacious enough to contain most important and interesting specimens. The table-tanks will be numerous, and placed in a conservatory, which will serve as a vestibule to the corridors of the aquarium as well as to the central hall. The floor above the entrance to the building will be used as a tea-room, the windows of which will open on to the upper part of the conservatory. The tea-room will communicate with a gallery running round the central hall, intended for the exhibition of scientific models. The central hall, flanked by the aquarium tanks, will be used as a concert-room. The site proposed for the building is in New Edmund-street.

A BIGGER "JACK" STILL.

A CORRESPONDENT, "W. B. S.," writes thus:—You have a notice of a great roasting-jack made for the Duke of Westminster's kitchen at Eaton Hall, in your paper of last week, and an account of one still greater—made for the "Teach Miodhchuarta," or banqueting-hall, of ancient Tara—may perhaps interest your readers.

This gigantic spit, called "Bir Nechin," or the Spit of Nechin, the chief smith of Tara, appears to have been half the length of the hall, and so constructed as to shut, or be coiled up, when not in use. A very old Gaelic MS., preserved in Trinity College, Dublin, describes it as—"a stick at each end of it, and its axle was wood, and its wheel was wood, and its body was iron: and there were twice nine wheels on its axle that it might turn the faster: and there were thirty spits out of it, and thirty spindles, and thirty hooks, and it was as rapid as the rapidity of a stream in turning: and thrice nine spits and thrice nine cavities [pots], and one spit for roasting, and one wing used to set it in motion."

The household of the Monarch of Erinn, that sat in the hall, numbered over a hundred, and the daily allowance for dinner was two cows, two salted hogs, and two pigs. A great double-handed vessel, called the "dabhac," or vat, held a hundred "drinkings," and the vat was furnished with fifty grooved golden horns, and a hundred pewter vessels.

Two plans of the great hall of Tara, with this great spit and its attendant "daul," or waiter, the "dabhac," and the different positions set apart for the company, taken from the "Book of Leinster" and the "Yellow Book of Lecaine," are given in the series of *fac-similes* of the National MSS. of Ireland, made at the Ordnance Survey Office in Southampton.

THE SPA COMPETITION, SCARBOROUGH.

SIR,—Some few years back the Cliff Bridge Company advertised for plans for laying out the new grounds, and offered premiums of 100*l.* and 50*l.*, the premiums to merge in the commission on the cost of the successful architect's plan. Numerous competitors from all parts of England sent in designs under motto. I was fortunate enough to obtain the first premium of 100*l.*, but as yet no extensive works have been carried out. I have also since the competition, by order of the committee, prepared various plans for skating-rinks, baths, extension of the promenade, &c., none of which have been carried out. I think, therefore, I deserve some consideration at the hands of the shareholders, having, as I consider, fairly won the position I at present hold of "Architect to the Cliff Bridge Company," and as it is the invariable custom when there has been a competition for the successful competitor to be employed for the carrying out of any works of a similar character, I hope no exception will be made in my case,—otherwise why have competitions?—for no architect of any standing would compete, did his success lead to nothing beyond the premium. The 100*l.* I received scarcely paid for the cost of getting out the competition plans, and further I prepared plans and superintended the construction of a retaining wall to the new ground at an outlay of about 800*l.* at no charge to the company; the commission on the same being 40*l.*, it reduced the premium of 100*l.* to 60*l.*, actually leaving me considerably out of pocket.

I do not think many architects are aware that at a meeting of shareholders, on the 13th of November, my plans were produced and approved of generally by the committee. They did not bind themselves to them in detail, for they were only sketch plans; since then the committee have issued instructions to architects, and in these instructions I see in clauses Nos. 1 and 4 they actually suggest what was shown in my plans, and which embodies the general scheme, thus giving to the public the benefit of all my thought and work. Of the injustice to me in this matter I will make no comment.

C. A. BURY.

THE NEW BRIDGE OVER THE REGENT'S CANAL, CHALK FARM ROAD.

SIR,—At a meeting of the Highways and Public Works Committee, held on Monday last, a member drew the attention of the committee to a letter that appeared in the *Builder* of the 2nd of December, signed "Matt. T. Shaw & Co.", in which the following misstatements are made:—

"The novel feature of utilising the two main girders to serve as gas mains emanated from and has been carried out by us. We have constructed these girders so as to be quite gas-tight,"—and I am directed by the committee to request your permission to correct the misstatements.

The idea (which is *not* novel) of utilising the two main girders to serve as gas mains did *not* emanate from Matt. T. Shaw & Co. It emanated from Mr. Hersey, the well-known and much respected Chief Inspector of the Imperial Gas Light & Coke Company. I had made provision for carrying a gas main of the same size only as the main that was laid over the old bridge, not knowing that the requirements o the gas company rendered necessary much larger mains over the canal for the supply of the district to the north of the canal. Mr. Hersey suggested the use of two of five main girders when he first became aware of their shape and size. The idea is not novel to Mr. Hersey. In 1871 the Imperial Gas Company constructed a bridge over Sir George Duckett's Canal—the "Three Colts-lane" Bridge—of which the three main wrought-iron girders are used as gas mains, the capacity of the three girder mains being equal to two 48-in. mains that are laid in Three Colts-lane (which leads from Old Ford-road to Victoria Park) on either side of the canal.

The other mis-statement I am directed to correct is this, "We have constructed these girders so as to be quite gas-tight." Unfortunately they are *not* so,—indeed, so little satisfactory is their condition as to gas-tightness, and the delay caused by the endeavours to make them so is creating so much dissatisfaction, that I have reason to believe the gas company contemplate the abandoning the idea of using the girders as gas-mains, unless they are rendered completely fit for that purpose within a very limited period.

WILLIAM BOOTH SCOTT, C.E.
Chief Surveyor to the Vestry.

St. Pancras.

"THE INFLUENCE OF BUSINESS REQUIREMENTS UPON STREET ARCHITECTURE."

SIR,—As my paper on the above subject, read at the Institute on Nov. 20th, was published *in extenso* in your journal, you will do me a favour by publishing the accompanying letter from Messrs. Belcher, having reference to my criticism upon Mansion House buildings.

Their explanation affords but another instance of the injury to architecture, and injustice to its professors, likely to result when employers fail to entrust the entire structure, with all its finishings, to the one master-mind of its designer.

SAMUEL KNIGHT.

In your interesting paper read before the Royal Institute of British Architects on "Street Architecture," &c., we observed in your otherwise flattering allusion to our Mansion-house Buildings, at the corner of Queen Victoria-street, that you justly criticise its "substructure of shops." Such is the value of frontage for advertising purposes that, in spite of our urgent request, the ground-floor was taken out of our hands, that experienced shop-front fitters might contrive to cover every available inch of space with plate glass! Massive piers which we had built at the circular corner were afterwards cut away, amongst other things, for this purpose. Thus we are in no way responsible as architects for this ground-floor, except the entrance to offices, which we with some difficulty maintained.

We believe that a re-action is now setting in, and healthy criticism will aid it. The shop-keeper is learning the fact that he can attract the attention of the public otherwise than by his goods and wares, and that a well-designed ground-floor in connexion with the upper structure gives a character to his business and distinguishes his shop from his neighbour's, and that with reasonable-sized openings or sub-divisions goods can be better classified and displayed.

J. & J. BELCHER.

CHURCH-BUILDING NEWS.

Hambledon (*Hampshire*).—The Bishop of Winchester has re-opened a fine village church, that of Hambledon in Hampshire. This church has double nave divided by a transverse arch, forming the entrance arch of a smaller church built in pre-Norman times. That edifice appears to have been enlarged by the addition of a northern aisle, whose massive pillars resemble those of St. Cross, near Winchester. Subsequently, a southern aisle was erected; and then, in the thirteenth century, an extension eastward was made by the erection of a second nave with aisles and a spacious chancel. This church retains the ancient feature of a gradual slope of the floor upwards, from west to east. The chancel was restored by the Ecclesiastical Commissioners under their architect, Mr. E. Christian; and the rest of the church at the expense of the parishioners from the plans of Mr. James Foster, of Southampton.

Shirburn.—The parish church of Shirburn has recently been re-opened, after restoration at the entire cost of the Earl of Macclesfield. The church, as it now stands, mainly consists of fourteenth-century work, but traces of a much older church have been found during the progress of the works. It consists of nave, chancel, north and south transepts, and north chapel, the latter being used as a burial-place for the Parker family. The church has been, with the exception of north transept and north chapel, entirely re-roofed, open roofs of stained deal, plastered between rafters, being substituted for the plaster ceilings and leaky roofs of old. The chancel roof is boarded with moulded ribs. A new south porch has also been built, and a stair turret added to the tower. The whole of the roofs are covered with Broseley tiles, of a warm brown tint. The floors of the nave and transepts are laid with Staffordshire quarries, arranged in various patterns. The floors of the chancel and sacrarium, and the mosaics of the reredos, were supplied by Messrs. Simpson & Co. The east window and west tower window have been filled with stained glass by Messrs. Ward & Hughes, of London; the subjects being—in the east window, "The Adoration of the Magi," and in the tower window, "Christ blessing little Children," the tower being used as a baptistery. The painted glass has been given by the Countess of Macclesfield. Some interesting discoveries were made during the progress of the works. In the south transept a fine Decorated window, concealed, on the inside, by a large monument, and, on the outside, by brick and plaster, has been opened and restored. The whole of the works were executed by Messrs. Symm & Co., of Oxford, under the direction of Mr. T. H. Wyatt, architect, of London, Mr. J. Stockham, Estate Clerk of Works, superintending.

Seend.—The chancel of Seend parish church, near Bath, has just been re-opened, after rebuilding. Seend Church is a Perpendicular erection, the nave and north aisle having been rebuilt in the fifteenth century, while the lower part of the old church appears to belong to a still older fabric. The chancel being considered very inadequate and unsuitable, the Vicar resolved, if possible, to rebuild it, and consulted Mr. A. J. Style, architect, of Thames Ditton, from whose designs the chancel has been rebuilt. In preparing his designs, the architect kept in view what he believed would have been the intentions of those who restored the church in the fifteenth century, had they been enabled to effect the entire rebuilding. Bath stone has been used in the construction of the building, the roof, which is covered with lead, being partly of oak and partly of pitch pine. The stalls are of oak. The total cost of the restoration has been about 1,000*l.* The contractor was Mr. R. D. Mullings, of Devizes.

Buckie.—All Saints' Episcopal Church, Buckie, has just been opened. The new church stands on the Square, on ground given by Mr. Gordon, of Cluny, the proprietor of Buckie, and may be described as of the Decorated Gothic style. Internally it measures 73 ft. by 21 ft. 6 in. It consists of a nave and chancel, the latter having a circular end. The chancel is separated from the nave by a stone arch, and is elevated by a series of steps, three at the arch, and two at the *sacrarium*. There will be accommodation for 180 persons. The entrance-door is at the south-west angle of the nave. A porch has been erected here, and above it is a tower and broached stone spire, rising to the height of about 100 ft. Mr. Ross, Inverness, was architect of the building, and the contractors for the whole of the work were Messrs. Stuart & Taylor, Peterhead. The gasfittings were supplied by Messrs. Cox & Son, London. The total cost was 2,000*l.*

The Ruins of Persepolis.—In a second lecture delivered to the members of the Midland Institute at Birmingham, on the 4th inst., Mr. Arthur Arnold said that two distinguished Englishmen who had written upon the ruins of the halls of Darius and Xerxes at Persepolis—Professor Rawlinson and Mr. Fergusson—had never seen them. Had Professor Rawlinson seen the buildings of Italy, of Greece, of Egypt, and of Asia, he never would have written of the ruins of Persepolis, and in particular of the Hall of a Hundred Columns, as the great pillared halls which constitute the glory of Arian architecture, and which even in their ruins provoke the wonder and admiration of modern Europeans, familiar with all the triumphs of Western art, with Grecian temples, Roman baths and amphitheatres, Moorish palaces, Turkish mosques, and Christian cathedrals. This is just the point in which the buildings of Persepolis fail. They are deeply interesting as records of the Achæmenian dynasty; they are illustrated books of priceless value in their inscriptions and sculpture; but for grandeur, and even solidity, they never were comparable to some of the buildings of Athens, nor among modern and Christian buildings to the church of St. Isaac in St. Petersburg.

STAINED GLASS.

Charlton.—The east window of All Saints' Church, Charlton, Wilts, has been filled with stained glass, the subject being the Crucifixion. The window is by Hardman & Co., of Birmingham, and was the gift of Earl Nelson.

Clive.—The little church in the village of Clive, near Grinshill, has just had all its windows renewed. The window over the reredos has been erected by Miss Catharine Harding, of The Clive. The subject of the design is the Ascension of our Lord. The memorial window and the other new windows are the workmanship of Mr. John Davies, of Shrewsbury.

Nottingham.—The new west window in St. Mary's Church, Nottingham, was dedicated on the 16th ult. The window is the work of Messrs. Hardman, and is stated to have cost 1,400*l*. The subject of the whole is the life of St. Mary. This window is in memory of the late Thomas Adams.

Dover.—A stained-glass window has just been added to Trinity Church, Dover. The centre light has been given by the Misses Pain, in memory of their late father, Mr. Thomas Pain, and another light by the family of the late Mr. John Hayward, as a memorial of their parents. The window altogether consists of five lights. Above these is a circular light. The work, which covers upwards of 200 square feet of glass, has been designed and executed by Messrs. Lavers, Barraud, & Westlake.

Buckland.—It has been determined to accept the design and specification of Messrs. Clayton & Bell for a stained-glass window for the north side of the chancel of Buckland Church, as a memorial of the late Rev. Joseph Moore, rural dean and vicar of Buckland.

Books Received.

The Economy of Workshop Manipulation. By J. Richards. London and New York: E. & F. N. Spon. 1876.

Books on construction generally consist of examples, drawings, and explanations of things constructed, but in most cases the learner can examine the things themselves. Examples and drawings relate to *how* things are constructed, but a better inquiry for a learner is *why* they are so constructed.

In studying a steam-engine, for instance, steam, as the motive agent, should first be studied, and an apprentice must first learn to regard force as an indestructible element,—something that may be measured and transmitted, but not created or destroyed, by mechanism; then the nature of the mechanism may be understood. But a learner should study the nature of the force which acts upon an engine through the example of, and as acting upon, that engine, and not abstractedly. Take, for instance, the case cited by the author, "the sum of the squares of the base and perpendicular of a right-angled triangle," being equal to the square of the hypothenuse. "How dull and objectless it seems to a young man," without knowing a purpose to which the problem is to be applied. But if the same learner were to see the foreman of a building squaring a foundation by measuring out six on one side and eight on the other, and ten across from point to point, he might see in this operation the application of that tiresome problem, and would awake to a new interest in the matter. And so, in studying the force of steam or of water, if he regard it as applied to an actual engine he will study it with more effect.

In designing the parts of an engine, or anything to which motion is to be given, regard must be had to experience in the velocity of the motion in actual machines. The author's remarks are mostly of a general character on machinery; but in the matter of shafts he says that experience has demonstrated that, for ordinary cases, where power is transmitted and applied with tolerable regularity, a shaft 3 in. in diameter, making 150 revolutions a minute, its bearings three to four diameters in length, and placed 10 ft. apart, will safely transmit 50-horse power. The strength of shafts to resist torsional strain varies as the cube of the diameter, and by assuming the above-described example to be true,—and it can be proved in numerous examples in practice whether it is true or not,—the diameter of a shaft to transmit greater or less power can be ascertained. The length between the bearings should be as the diameter, and the speed inversely as the diameter. The transmission of power by means of belts, by gearing, by water, and by air, is commented upon by the author; and in respect of the use of air he gives a few useful directions for consideration:—1. The value of pneumatic machinery in reaching places where steam-furnaces cannot be employed. 2. The use that may be made of air after it has been applied as a motive agent. 3. The saving from condensation, to which steam is exposed, avoidance of heat, and the consequent expansion and contraction of long conducting pipes. 4. The loss of power by friction and angles in conducting air through pipes. 5. The lubrication of surfaces working under air-pressure, such as the pistons and valves of engines. 6. The diminished cost of generating power on a large scale compared with a number of separate steam-engines distributed over manufacturing districts. 7. The effect of pneumatic machinery in reducing insurance rates and danger of fire. 8. The expense of the appliances of distribution and their maintenance. We commend these remarks o the attention of our readers.

Throughout the book are dispersed hints and remarks useful alike to the apprentice, the workman, and the master.

VARIORUM.

Under the title of "Rough Sketches from the Hebrides," Miss Florence Selous is contributing to "Chambers's Journal" some graphic papers on this little known district. We quote a few sentences from her "Glimpses of Skye":—"Before quitting the Highlands, I must say just a few words about the people who live and die in these beautiful regions of mountain and valley, lake and sea. The rain, and the mist, and the sharp mountain air seem favourable for the development of muscle and bone, for these men and women are a fine, stalwart, healthy race; in many places, especially among the sailor and fisher classes, they are a handsome race as well, with fair hair and skins, fine features, and keen eyes. In and about Stornoway, many of the women are beautiful, and their beauty is set off to great advantage by a very picturesque costume. But everywhere, whether handsome or not, we have found them characterised by a peculiar gentleness and courtesy of manner, by a natural refinement, that removes them utterly from the very slightest tinge of vulgarity and commonness, and by an intelligence and cultivation which are rarely met with among the lower classes in the south. Not only do they nearly all read and write, even those who dwell in miserable mud hovels, but many of them read books, and think, and deliver themselves in well-chosen and intelligible, if quaint English, on various subjects of public and individual, or even political, interest, upholding their own opinion warmly and well when they happen to differ from you. Many of them feel and speak strongly on the subject of the system of large landholderships that prevails throughout the Highlands to the exclusion of peasant proprietors, and also of the severity of the game-laws, and the harshness of the punishments attendant on the breaking of those laws. In their speech they are singularly refined; and the very poorest, even when quarrelling, rarely make use of the vulgar, meaningless, and brutal words and oaths that disgrace and disfigure the speech of the poor in England either in town or country. As for real kindness, ready sympathy, and willing help in any emergency, I think these Highlanders cannot easily be surpassed."—*Cassell's Family Magazine* suggests comfort for cold journeys:—"During a far and tedious journey, the want of some method of warming railway carriages is a bitter experience to most travellers. Foot-warmers are not enough, and even these are not always available, or even procurable. People have, therefore, to remain in half-frozen wretchedness, and it is, perhaps, not too much to say, that railway discomforts kill more people than railway accidents. A French inventor, however, has contrived a combustible compound which may help to introduce a golden age for travellers. 'It is,' he says, 'susceptible of numerous applications, but it is specially designed for warming vehicles employed for the transport of passengers on railways and common roads.' The base of this new fuel is carbonised tan or wood-bark, which is mixed with a small quantity of nitrate of lead, or spirit of nitre; slaked lime or loam being added as agglutinative or agglomerative matter. The composition burns very gradually, and the combustion may be rendered still slower by adding to the above materials a small quantity of the dust of wood-charcoal. Neither smell nor smoke is given off, and the new compound not only ignites with the greatest facility, but once ignited burns continuously and uniformly. A small quantity burned in a footwarmer or chafing-pan, with a limited supply of air, will not be completely consumed for about sixteen hours, and during that time will develop heat enough to warm a compartment of an ordinary railway carriage."—Messrs. T. Pettitt & Co. have issued a new pocket diary ruled for quantities, specially for the use of architects, surveyors, and builders.—"Mr. Punch's Pocket Book" retains its usual character. The frontispiece illustrates amusingly "the Autumn (Matrimonial) Manœuvres." Mr. Tenniel's "Modern Munchausen" is excellent.—We understand that of Captain Burnaby's "Ride to Khiva" not less than 1,000 copies, in addition to the large number required by the other libraries, have been taken by Mr. Mudie alone; that the first and second editions of the work were exhausted in a week; and that a third edition is already nearly exhausted. A fourth edition is in the press.

Miscellanea.

Art Teaching.—Mr. W. H. Fisk, of University College, delivered an address on Monday on this subject before the Society of Lady Artists, in their gallery, Great Marlborough-street. Mr. Fisk said that in the course of an experience of over thirty years in teaching he had learned the requirements and the difficulties of students. In the first place, art was a craft, and to produce good work certain rules must be followed. In a painting school, the subjects necessary for a pupil to study were form, methods of painting, composition, effect, colour, perspective, and the aspects of nature. As to whether the study of form should be pursued from the life first or from the antique, the antique, he said, should be used for improving the taste, but the pupil must be educated to understand where the beauty of the antique lay. With respect to methods of painting, the various methods used by the old masters should all be taught to the student, when he would discover some method through which he would feel that he could express himself with the brush. The rules of composition, colour, and effect should also be learned, for this reason,—that if a student had no feeling for any one of these, the knowledge of the rules would prevent his making blunders. The great evil of the present art-teaching was that the teachers staked everything upon the chance of the pupil having a feeling of art; and the rules which he urged as of importance after his long experience were lost sight of. A pupil could only learn his craft through the medium of analysis, and therefore the study first of all should be analytic. He considered it disgraceful that in this country there was no school for the students of landscape-painting.

Improvements in Prince's-street, Edinburgh.—Although, so far as the reconstruction of the Prince's-street carriage-way is concerned, arrangements with the Tramway Company and the Road Trust have not yet been completed, the City authorities, with a view to push on the work connected with the improvement of that important thoroughfare, have invited estimates for the widening of the north foot pavement and the erection of new parapets and railings alongside of the gardens. The probable cost of the work, for the portion of the street between Hanover-street and Hope-street,—being the section included in the agreement between the corporation and the West Prince's-street proprietors,—is stated at 12,160*l*., 2,344*l*. going for the railing, copestone, &c., 7,412*l*. for the carriage-way, and 2,404*l*. for the foot-pavements. On the portion of the thoroughfare between Hanover-street and South St. Andrew-street, the expenditure is expected to be 6,084*l*.,—781*l*. for railing, 4,378*l*. for the carriage-way, and 925*l*. for the foot-pavements. The remaining part of the street has not been included in the estimate of the cost.

Bristol Free Libraries.—The active chief librarian, Mr. J. F. Nicholls, has just now issued an Index Catalogue of the volumes in the Central Library, King-street, Bristol,—including both the Lending and the Reading Department. The collection in the various Public Free Libraries there has become a very large and good one.

A Well-Earned Compliment.—Last year, when Mr. B. T. Brandreth Gibbs was for the thirty-third year elected the honorary secretary of the Smithfield Club, the Prince of Wales then being president of the Club, and occupying the chair, a special vote of thanks was given to that gentleman. This vote of thanks was duly engrossed on vellum, and enclosed in a handsome box of triptych form, made of coromandel wood, mounted with heavy ormolu hinges, ornamental clasps, and monogram in Mediæval style, made by Leuchars & Son, of Piccadilly. To add to the satisfaction of Mr. Gibbs at receiving such a testimonial of his long and useful labours in connexion with the club, the Prince of Wales graciously undertook to make the presentation in person. The Royal party, with the members of the council of the club, Mr. Gibbs, Mr. R. Leeds, Mr. Sidney, Professor Simonds, Mr. Beck, and other gentlemen, being assembled in the board-room, the resolution was read. It was headed "Smithfield Club. President, his Royal Highness the Prince of Wales, K.G. At a general meeting of the members, held Dec. 7, 1875, resolved unanimously that a special vote of thanks be presented to Mr. B. T. Brandreth Gibbs on the occasion of his election, for the thirty-third time, as honorary secretary, in recognition of the interest he has taken in the club, and the valuable and efficient services he has rendered it for so many years." This engrossed copy was taken from the box by the Prince, who affixed his sign manual, and then placing it in Mr. Gibbs's hands, said,—"I have very great pleasure in presenting you with this very well-earned testimonial." Mr. Gibbs, in reply, said,—"I have to offer your Royal Highness my most sincere thanks for the very great honour you have done me in deigning to present this to me personally. The fact that it bears your Highness's signature also greatly enhances its value in my estimation."

Disparity of Wages in London and Provincial Towns.—The *Lytham and Kirkham Times* of the 29th ult., writing under the heading "The Building Trade," says that for a considerable time there has been an under-current of dissatisfaction amongst provincial artisans, arising from the disparity between the wages paid in London, and (say) in Liverpool, Manchester, and Leeds. "It is true, that this course of discontent has not, as yet, been brought prominently to the front, but that it exists, and is widely spreading, is beyond all question. Complaints are also rife in all of the trade unions respecting the imperfect arrangements that have been made with the view of equalising wages in different districts. We do not know, nor do we at present care to inquire, what grounds there are for the dissatisfaction and discontent. We have only to chronicle the fact, and further state that we are informed, upon unimpeachable authority, that by one branch at least, of the building trade, there is organising a strike to take place early next spring, which, if successful, will put upon a par the wages paid in London and those of a wide manufacturing district in Lancashire. It is said the demand made will be for tenpence per hour,—and for the working time to be limited to forty-nine and a half hours per week. Notice of this impending strike has already been given by the officers of one if not more of the trade unions."

The Thames Valley Drainage.—Colonel Cox, the Local Government Inspector, reporting on the recent conference held on this question, says that, so far as the information before him enables him to form an opinion, it is that a scheme to unite for purposes of main sewerage Kingston, Surbiton, New Malden, Hampton Wick, Teddington, Twickenham, Richmond, Ham Common, East Molesey, parts of Kingston, and parts of Richmond Rural Sanitary Districts, is a practicable one, and one which it would be to the advantage of those districts to adopt. He accordingly suggests that the Local Government Board should direct a formal inquiry under section 279 of the Public Health Act on the application of the Hampton Wick Local Board, which would enable further information to be obtained so as to ensure that a decision may be come to as to whether or not a provisional order should be made forming a district.

Burton-on-Trent Archæological Society. On the 5th inst. there was a general meeting of the members of this Society in the Grammar School, when Mr. W. Molyneux, F.G.S., read the first portion of an interesting paper on "The Old Bridge of Burton-on-Trent."

London Water Companies.—The certified expenditure of the eight metropolitan water companies down to the end of the year 1875 was as follows:—New River Company, 2,792,201*l.*; East London, 1,898,087*l.*; Southwark and Vauxhall, 1,766,904; Lambeth, 1,215,706*l.*; Grand Junction, 1,190,729*l.*; Chelsea, 979,973*l.*; West Middlesex, 916,696*l.*; Kent, 535,910*l.* The total is 11,296,206*l.* About 360,000*l.* of this amount had been expended in the course of the year 1875, and as further expenditure was required for improvements in storage, filtering, and distributory works, the aggregate capital laid out must by this time be nearer twelve than eleven millions. In reporting on the companies' accounts for the year 1875, Mr. Stoneham, the author appointed under the Water Act of 1871, notices the practice adopted by some companies of borrowing from their bankers for purposes of revenue, or habitually keeping in hand a balance of capital to be temporarily appropriated towards defraying current expenditure and carrying on the daily operations pending the collection of the water rents.

The Thornton Viaduct, Bradford.—The keystone of the last arch of the large viaduct at Thornton in connexion with the Bradford and Thornton Railway was laid by Mr. Isaac Wood on the 29th ult. The first arch was keyed on May 2, 1874. The viaduct is 280 yards in length, and is an S-curve, the curvatures being at the two extremities of the viaduct. It is composed of twenty arches, each of 40 ft. span, the greatest depth being 108 ft. to the bottom of the Pinchbeck Stream, about 17,000 cubic yards of masonry, and three-quarters of a million bricks being used. The stone has been supplied from Messrs. Farrar's quarries at Bell Dean, and the bricks by Messrs. Thwaite, of Thornton. The engineer of the railway is Mr. John Fraser, and Mr. H. J. Fraser, resident engineer, from whose designs the viaduct has been built, and the work of construction has been under the supervision of Mr. Henry Wilson. Messrs. Benton & Woodiwiss are the chief contractors for the line, their manager being Mr. E. Shaw.

Reported Discoveries by Dr. Schliemann. The following copy of a telegram from Dr. Schliemann to the King of the Hellenes has been received at the London office of the *New York Herald*:—

"To his Majesty King George.

With unbounded joy I announce to your Majesty that I have discovered the monuments which tradition, as related by Pausanias, points out as the tombs of Agamemnon, Cassandra, Eurymedon, and their companions, who were all killed whilst feasting at a banquet by Clytemnestra and her lover, Ægisthus. These tombs are surrounded by a double parallel circle of tablets, which were undoubtedly erected in honour of those great personages. In these tombs I have found an immense archæological treasure of various articles of pure gold; this treasure is alone sufficient to fill a large museum, which will be the most splendid in the world, and which in all succeeding ages will attract to Greece thousands of strangers from every land. As I am labouring from a pure and simple love for science I waive all claim to this treasure, which I offer with intense enthusiasm in its entirety to Greece. Sire! May these treasures, with God's blessing, form the corner-stone of immense national wealth.

DR. HENRI SCHLIEMANN.

Mycenæ, Nov. 28, 1876."

Crystal Palace.—The dramatic season of 1876 at the Crystal Palace has been one of unusual activity, and its close has been marked by an event that may be justly claimed as one of considerable importance, namely, the production, for the first time on the English stage, of Euripides's drama "Alcestis," with Mr. Henry Gadsby's music to the choruses. The revival of Sophocles's "Antigone," with Mendelssohn's music, led to the first English stage performance of the same great tragedian's "Œdipus at Colonos," also with Mendelssohn's music; but the performance of "Alcestis" has an interest surpassing that attaching to the performance of its predecessors, as not being a rendering of an English version of a German version of the original, but an attempt to represent a Greek play by means of a direct English translation, and with music by an English composer.

A Contractor committed for "Manslaughter."—The Coroner for the borough of Windsor has concluded an inquiry respecting the death of Francis Tarrant, who was killed by falling from the steeple of the Wesleyan Chapel now in course of erection on St. James's-walk. Mr. Geo. Reavell, the contractor, was examined. The jury, after deliberation, came to the conclusion that "Mr. Reavell had been guilty of culpable neglect," which, the Coroner said, amounted to a verdict of manslaughter. Mr. Reavell was formally committed for trial.

New Skating-rink at Nottingham.—A new skating-rink, called the "Alexandra," has just been opened at Nottingham. It covers an area of 1,235 square yards, but an additional 600 yards have been secured with the object of establishing an outdoor rink. The building is a brick structure 60 ft. high, and the shape of the interior is described as that of a diamond or lozenge. The skating surface is of asphalte, supplied by the Birmingham Val de Travers Company, and it covers the large area of 9,500 square feet. The architects were Messrs. Evans & Jolly; the builders for the brickwork, Mr. Frederick Messon; for the woodwork, Messrs. Knight & Hammersley; while the iron roof was supplied by Messrs. Handyside, of Derby; the plumbing was executed by Mr. Cordon, and the painting work by Mr. Gascoyne, jun.

Discovery of Mica.—The *New York Times* states that the schooner *Era*, which was despatched by a Philadelphia company a few months ago to Cumberland Bay, Baffin's Land, in search of graphite and mica, has returned from her expedition. The *Era*, which was under the command of Lieutenant Mintzer, of the United States navy, arrived at the place known by whalers as the Nialtic Valley, where the crew, which consisted of thirty men, established a tramway and working sheds. The mica was found in veins 10 ft. below the surface, and some of the blocks brought back by the Mintzer expedition are of great size and purity, being nearly 20 in. square and weighing 50 lb. Altogether the crew of the *Era* obtained 15 tons of mica, and to do this exhausted three veins. The mica is estimated to be worth from $5 to $12 a pound.

The Burns Monument, Glasgow.—At a recent meeting of the committee entrusted with the erection of a monument to Burns in Glasgow, it was stated to be the intention of the committee to place four bas-reliefs on the pedestal of the statue. These relievos are intended to represent the "Cottar's Saturday Night," "Tam o'Shanter," "The Twa Dogs," and "The Vision." Mr. Ewing has these relievos in hand. In answer to inquiries, Messrs. Cox & Son, the founders, in London, had written saying that the cast of the statue had been one of the most perfect they had ever produced, and that they expected to have it ready for delivery by the end of December. Messrs. Meldrum Brothers, Dumfries, had also written, stating that the pedestal would be finished early in January.

Schools: Shepton Mallet.—New schools for the accommodation of 190 children, with master's house, and the necessary offices, have been erected and opened at Kilver-street, one of the outlying districts of the town. They are intended to be used on Sundays as a chapel of ease, the architects having considered the two-fold object in planning the buildings. The buildings are constructed of local lias stone, with Doulting stone dressings; the roofs of the schools are open timbered (pitch-pine), and covered with Bridgewater flat tiles and ornamental bands. The cost of the works is about 1,500*l.* This has been raised by voluntary contributions. Thus the necessity of a School Board and the burden of a rate have been superseded. The architects are Messrs. C. & J. Wainwright, and the builder is Mr. Luke Stock, all of Shepton Mallet.

Fine Art Exhibition for Derby.—Next year (says a Derby paper) will witness the realisation of an addition to our educational buildings, in the opening of the new School of Art, on Green-hill, when the work of the school will in future be pursued under every advantage for the study of art. The committee find that they have at their disposal about 8,000 square feet of hanging space. It is proposed to form an exhibition of works borrowed for the purpose, and of pictures exhibited by the artists themselves. An effort will be made to make a marked feature of high-class modern water-colour art. The officials of the Science and Art Department have promised a collection from the South Kensington Museum.

Destruction of the Nottingham County Hall by Fire.—On the night of the 1st inst. the County Hall at Nottingham was almost totally destroyed by fire. Of the old court, nothing remains but the bare and blackened walls, and the roof of the spacious new court which has lately been erected was burnt away, while the interior was greatly damaged. The fire is attributed to the over-heating of the flue in the old court. The damage is estimated at about 20,000*l.*

Redditch Sewerage.—At the last meeting of the Local Board at Redditch, on the 4th inst., it was resolved that Messrs. Gotto & Beesley's plan for the drainage of the town be adopted, and that the plan for Headless Cross be adopted, subject to certain modifications to be arranged between the engineers and the Public Works Committee. The Clerk was instructed to give formal notice to the Loan Commissioners that a sum not exceeding 10,000*l.* would probably be required for drainage, and to request the Local Government Board to send an inspector to examine and report on the adopted plans.

Darlaston.—On the 27th ult., two stones commemorative of the restoration of the Wesleyan Chapel, Darlaston, were laid by Mr. J. Taylor, of Knowle, and Mr. E. Horton, of Darlaston, in the porch of the structure. The restoration is to be complete, and it will include the raising of the front elevation and the addition of a porch, and the entire remodelling of the interior, with the decoration of the ceiling and the wall spaces, the total cost of the work being estimated to amount to 2,500*l.*

The Mansion-House Cistern.—The dreadful condition of the principal cistern in the residence of the Lord Mayor of London has been described in all the newspapers. We hope this occurrence will lead some of our readers to look to their own cisterns, and, above all things, to see that they have no connexion with the house-drains.

The Town Council of the Borough of South Shields have agreed, upon the application of Mr. Matthew Hall, borough surveyor, to pay him a commission of 2½ per cent. for carrying out the sewerage of new building estates, as private improvement expenses. Mr. Hall is also authorised to appoint a special inspector for the works, at a salary of two guineas per week.

Sewage Disposal at Bristol.—The Bristol Town Council have resolved to purchase the Clift House Estate, near that city, for about 7,000*l.*, with the object of using it for receiving and disposing of the sewage of the city, which, under the Rivers Pollution Act, can be no longer allowed to enter the tidal river.

TENDERS

For the erection of house, offices, and stables, Steventon Manor, near Micheldever, Hants, for Mr. H. Harris. Mr. R. Morrison Marnock, architect. Mr. Geo. Fleetwood, surveyor:—

Hale & Son	£27,274	0	0
Futcher	26,023	0	0
Patman & Fotheringham	24,470	0	0
Hill, Higgs, & Hill	24,200	0	0
Trollope	24,067	0	0
Holland & Hannen	23,379	0	0
Hayward	23,300	0	0
Brass	22,622	0	0
Bull & Son	20,778	0	0

For alterations and additions to South Bank, Surbiton-hill, for Mr. Wilberforce Bryant. Mr. Rowland Plumbe, architect. Messrs. Fowler & Hugman, surveyors:—

Nightingale	£8,793	0	0
Conder	8,391	0	0
Hill, Higgs, & Hill	8,190	0	0
Killby	8,047	0	0
Sewell	7,870	0	0
Dove Bros.	7,800	0	0
Moreland & Nixon	7,760	0	0
Messom	7,697	0	0
Adamson & Sons	7,695	0	0

For subway to retort-house, cart-shed, and verandah to office window, at the Folkestone Gas and Coke Company's Works. Messrs. Burgess & Reeve, architects:—

Prebble	£209	0	0
Newman	197	0	0
Hoad	185	0	0
Clements	184	0	0
Webster	169	0	0
Dunks	138	10	0
Holdem	133	0	0
Butler (accepted)	128	0	0

For additions to residence, at Trewyn, near Abergavenny, for Mr. J. L. Rosher. Mr. E. H. Lingen-Barker, architect:—

Biggs (accepted)	£1,155	0	0

For a pair of villa residences and stabling, at Basingstoke. Quantities supplied. Mr. J. H. Moore, architect:—

Oliver	£1,530	0	0
Budden	1,522	0	0
Barnes	1,398	0	0
Allen	1,380	0	0
Charlton	1,232	0	0
Smith	1,143	0	0

For additions to the Osborne Hotel, Clacton-on-Sea. Mr. Horace Darken, architect:—

Pollard	£665	11	6
Cauler Bros. (accepted)	598	0	0

For alterations and improvements to the Lion Inn, Wivenhoe, for Messrs. A. T. Osborne & Co. Mr. Darken, architect:—

Barrell	£218	10	6
Pitt	218	0	0
Smith (accepted)	216	0	0

For painting works to warehouse, Old Change, for Messrs. Sharp, Perrin, & Co.

Pitman & Cuthbertson (accepted)	£284	10	0

For building carriage factory, Islington-green, for Mr. Brockelbank. Mr. A. C. Bean, architect. Quantities supplied:—

Dove Brothers	£3,873	0	0
Roberts (too late)	3,843	0	0
Adamson & Sons	3,487	0	0
Johnson	3,353	0	0
Carter	3,230	0	0
Bayes Brothers & Allen *	2,915	0	0

* Accepted.

For sewerage of new building estates, near Westoe, South Shields. Mr. Matthew Hall, surveyor:—

Lancaster	£2,220	0	0
Winter	1,977	13	9
Kennedy	1,895	12	9
Copeland	1,768	0	0
Bell	1,675	8	4
Harvey	1,651	13	0
Suddards	1,628	0	0
Marshall	1,350	10	0
Craig (accepted)	1,304	10	3

For sewerage of new building estates, on the Shields Heugh Estate. Mr. Matthew Hall, surveyor:—

No. 1 Contract.

Marshall	£905	7	2
Suddards	880	4	11
Copeland	768	0	0
Craig (accepted)	758	18	0

No. 2 Contract.

Marshall	£466	17	5
Suddards	455	2	4
Copeland	420	0	0
Craig	406	10	4

For new buildings, High-street, Shoreditch. Messrs. Fowler & Hill, architects. Quantities by Messrs. Fowler & Hugman:—

Brass	£6,793	0	0
Palmer	6,699	10	0
Hill, Higgs, & Hill	6,240	0	0
Wagner (accepted)	5,178	0	0

For a villa residence, at Stockwell-end, Tettenhall, for Mr. G. H. Perry. Mr. J. R. Veall, architect:—

Lovatt (accepted)	£2,400	0	0

For the erection of the Cavendish Fireproof block of buildings, at Derby, for the Midland Improved Industrial Dwellings Association (Limited). Mr. Geo. R. Isborn, architect. Quantities supplied:—

Bell & Son	£12,476	0	0
Stevenson	12,380	0	0
Dennett & Co.	12,253	0	0
Barber	12,106	0	0
J. & E. Wood	11,898	15	0

For additions and alterations to Temple, Great Marlow, the seat of Colonel Owen Williams. Sand, ballast, &c., provided. Mr. W. H. Powell, architect. Quantities supplied by Mr. Thomas Ladds:—

Brass	£3,893	0	0
Trollope	3,697	0	0
Shaw (accepted)	3,000	0	0

For the erection of warehouse in Cannon-street, for Mr. H. Woods. Messrs. Taylor & Locke, architects. Quantities by Mr. W. Birdseye:—

Newman & Mann	£5,006	0	0
Browne & Robinson	4,992	0	0
Deards	4,888	0	0
Brass	4,880	0	0
Killby	4,830	0	0
Shepherd	4,800	0	0
Sewell & Sons	4,792	0	0
Morter (accepted)	4,650	0	0

For the erection of warehouse, Cannon-street, for Messrs. J. Brook & Bros. Messrs. Taylor & Locke, architects. Quantities by Mr. W. Birdseye:—

Browne & Robinson	£4,751	0	0
Newman & Mann	4,699	0	0
Deards	4,627	0	0
Brass	4,554	0	0
Shepherd	4,500	0	0
Sewell	4,488	0	0
Killby	4,456	0	0
Morter (accepted)	4,214	0	0

For rebuilding warehouse, Cannon-street, for Messrs. C. & J. P. Potter. Messrs. Taylor & Locke, architects. Quantities by Mr. W. Birdseye:—

Newman & Mann	£4,790	0	0
Browne & Robinson	4,631	0	0
Brass	4,493	0	0
Sewell & Sons	4,436	0	0
Shepherd	4,4 0	0	0
Deards	4,397	0	0
Killby	4,340	0	0
Morter (accepted)	4,340	0	0

For rebuilding the Skinners' Arms, Cannon-street, for Messrs. Chapman Bros. Messrs. Taylor & Locke, architects. Quantities by Mr. W. Birdseye:—

Newman & Mann	£7,798	0	0
Browne & Robinson	7,764	0	0
Brass	7,565	0	0
Deards	7,485	0	0
Sewell & Sons	7,454	0	0
Killby	7,350	0	0
Shepherd	7,100	0	0
Morter (accepted)	6,994	0	0

For rebuilding 5, Bow-lane, for Mr. H. Woods. Messrs. Taylor & Locke, architects. Quantities by Mr. F. Overall:—

Parrell	£1,300	0	0
Killby	893	0	0
Morter	890	0	0
Sewell & Sons	885	0	0
Shepherd	850	0	0
Woods	798	0	0
Beeton (accepted)	7c9	0	0

For rebuilding a warehouse, Goldsmith-street, City. Messrs. Ford & Hesketh, architects:—

Boyce (accepted)	£1,971	0	0

For additions and alterations to a warehouse, Love-lane, City. Messrs. Ford & Hesketh, architects:—

Nightingale	£13,856	0	0
Peto Bros.	13,806	0	0
Lawrence	13,776	0	0
Ashby Bros.	13,731	0	0
Browne & Robinson	13,602	0	0
Perry Bros.	13,544	0	0
Conder	13,365	0	0
Dove Bros.	13,135	0	0
Brass	12,483	0	0
Shaw (accepted)	12,093	0	0

For rebuilding two warehouses, Jewin-street, City. Messrs. Ford & Hesketh, architects:—

Crabb (accepted)	£4,330	0	0

TO CORRESPONDENTS.

Small Capitalist (work delivered on the premises, though not fixed, is often considered in certifying for advance under a contract, but in that case contract should include a clause that no work once delivered is to be taken off the premises. Work in preparation in the contractor's shops affords no security to the employer).—W. & W. (we are unable to assist).—M. P. (shall have consideration).—J. R. R.—G. H.—C. A. W.—W. W.—B. & R.—J. R. N.—F.—J. L.—T. H.—R. G. W.—Mrs. W.—F. & H.—J. R. V.—P. & C.—C. C. H.—I. M. M.—M. H.—H. D.—C. B.—J. M. R.—Thomason College.—W. L.—G. & R.—F. W.—E. L. B.—B. T.—T. B.—C. W.—J. W. S.—G. R. I.—J. C. S.—H. F.

We are compelled to decline pointing out books and giving addresses.

All statements of facts, lists of tenders, &c. must be accompanied by the name and address of the sender, not necessarily for publication.

Notice.—The responsibility of signed articles, and papers read at public meetings, rests, of course, with the authors.

CHARGES FOR "WANTED" ADVERTISEMENTS.

SITUATIONS VACANT.

Six lines (about fifty words) or under ..... 4s. 6d.
Each additional line (about ten words) ..... 0s. 6d.

SITUATIONS WANTED.

FOUR Lines (about THIRTY words) or under .. 2s. 6d.
Each additional line (about ten words) ..... 0s. 6d.

PRE-PAYMENT IS ABSOLUTELY NECESSARY.

TERMS OF SUBSCRIPTION.

"THE BUILDER" is supplied *direct* from the Office, to residents in any part of the United Kingdom at the rate of 18s. per annum. *Payable in Advance.*

Halfpenny Stamps accepted for amounts under 5s. Any larger sum should be remitted by Money Order, payable at the Post-office, King-street, Covent-garden, W.C. to DOUGLAS FOURDRINIER.

Advertisements cannot be received for the current week's issue later than THREE o'clock p.m. *on THURSDAY.*

Bath Stone of best quality.
RANDELL, SAUNDERS, & CO. (Limited),
Quarrymen and Stone Merchants.
List of Prices at the Quarries and Depôts; also cost of transit to any part of the Kingdom, on application to
Bath Stone Office, Corsham, Wilts. [Advt].

Patent Selenitic Cement, with double the usual sand, is much stronger than ordinary mortar. Plastering finished in much less time at less cost. Excellent substitute for Portland cement for Concrete at less than half its price.—1, Great College-street, S.W. [Advt.]

Asphalte.
Seyssel, Patent Metallic Lava and White Asphaltes.
M. STODART & CO.
Office:
No. 90, Cannon-street, E.C. [Advt.]

The Seyssel and Metallic Lava Asphalte Company (Mr. H. Glenn), Office, 38, Poultry, E.C.—The best and cheapest materials for damp courses, warehouse floors, flat roofs, stables, cow-sheds and milk-rooms, granaries, tun-rooms, terraces, and skating-rinks. [Advt.]

Whitland Abbey Green Slates.—These Quarries are now fully opened out, and are producing Slates in all sizes, and in any quantity: sound, and of choice green tint.—For samples and further particulars, apply to the MANAGER, Clynderwen, R.S.O. Carmarthenshire. [Advt.]

Electric Bells for Domestic Use.
Marlborough Works,
W. S. ADAMS & SON,
No. 41, Marshall-street, Golden-square, W.
Catalogues and particulars forwarded on application.—[Advt.]

MICHELMORE & REAP,
Manufacturers of
CHARLES COLLINGE'S PATENT
COLLINGE'S PATENT HINGES, LEVER, SCREW, & BARREL BOLTS,
and IMPROVED GATE FITTINGS of every Description.
Discount to Builders.
Illustrated Sheet on application.
36A, BOROUGH ROAD, LONDON, S.E.